# The Iron A

## A Review of the Hardware, Iron and Metal Trades.

Published every Thursday Morning by DAVID WILLIAMS, No. 83 Reade Street, New York. Entered at the Post Office, New York, as Second-Class Matter.

Vol. XXVII: No. 4.

New York, Thursday, January 27, 1881.

\$4.50 a Year, Including Postage. Single Copies, Ten Cents.

penniess and amoust friendess. Landing that Pittsburgh offered superior inducements for a mechanic, he went to that city in the spring of 1846, and after enduring considerable hardship, because of his ignorance of the language, he at last obtained employment in the old Novelty Works, which manufactured locks and a general line of small hardware. This work being uneongenial to his tastes, he soon left and obtained a situation in the steel works of Singer, Hartman & Co., where his mechanical shill and industrious habits soon gained him favorable recognition, and he was entrusted with the responsible work of finishing and testing steel wagon springs. He won his way rapidly to the good opinion of his employers, and was acknowledged to be the foremost workman of the place. By working early and late and economising his working early and late and economising his earnings, he saved enough money in a few years to enable him to start in business for years to enable him to start in business for himself, and in the year 1853 he began in a very small and modest way, by erecting a forge and doing the work himself, with the assistance of his elder brother, who had already earned a reputation as a first-class hammerman. This was the beginning of what was twenty years later one of the most powerful and extensive concerns in this country. The inventive genius and progressive spirit of Andrew Kloman now began to assert themselves, and step by step he discarded almost all of the traditions of his trade, and devised original machinery of his trade, and devised original machinery and methods for doing everything required

in his business.

The outbreak of the war created a great The outbreak of the war created a great demand for axles, and he invented a new method for making the pile from which the axles were to be hammered. This consisted in making a bundle of r-inch square bars, bound closely together, with the direction of their fibers alternately reversed. This made such a superior axle, that the "Kloman" brand was soon widely known and eagerly sought after.

eagerly sought after.

About this time the two brothers separated and Andrew Kloman associated with himself in business Mr. Henry Poipps, and they to-gether built the large mill in the Twelfth Ward in Pittsburgh, now owned by Wilson, Walker & Co. He turned his attention to relief of the turned his attention to rolled shapes, and made many improvements in their designs, and in the machinery for rolling them. Fortune favored the firm, and it was so prosperous that in 1864 they consolidated with the owners of the Cyclops Mill, and formed a stock company. Cyclops Mill, and formed a stock company to operate both mills, under the name of the "Union Iron Mills," Andrew and Thomas M. Carnegie principally owning the additional stock. Mr. Kioman, in pursuit of his business, invented many new devices and machinery, chiefly among which were the cold saw, and a straightening machine which involved a new mechanical motion. This consisted in shortening and lengthening at will the stroke of a piston driven by a cam movement. Concerning the cold saw, although Mr. Kloman was undoubtedly the first man to apply this principle to custing iron cold, yet he was too honest to claim the invention as his own and to patent it, as he might well have done. Mr. Kloman admitted that he had conceived the idea from seeing the Europeau watch makers cutting small spur wheels out of brass disks, by hearing them are instructed to the service of the servi bearing them against rapidly revolving steel disks of the size of a penny. He now began making improvements in the art of rolling beams and other shapes, and brought all of these to a high state of perfection.

When Captain Eads was pushing the St.

Louis bridge to completion, he desired to obtain a reliable coupling for the steel tubes which form the arches of the bridge. After experimenting with cast steel for some time, he abandoned it and decided to try wrought iron; but the shape was enormously large— much larger than anything before attempted in this country-and he doubted the ability of any American mill to produce it. In his dilemma he was referred to Andrew Kloman, who examined the drawing of the shape carefully, and promptly said that he could make it if they could pay enough to justify the necessary expenditure. The price was agreed upon, and in a short time the rolls

Andrew Kloman.

We have pleasure in presenting herewith a portrait of the late Andrew Kloman, of Pittsburgh, whose death was announced in our issue of December 23, 1830. Mr. Kloman to turn his attention more particularly to the manufacture of special approximately app

shaped steel bed, on which the middle knifeedge rests, is easily drawn out with the
finger from the swallowtail shaped rollers,
between which it is passed in the body of
the balance. The beam can thus be easily
removed and replaced. Each weighing
scale hangs on a conical point, and the stopping and raising arrangement is contained
in a horizontal frame. Great accuracy in
the readings is obtained by substituting for
the pointer an optical arrangement on the
beam, consisting of two achromatic glass
prisms, which render parallel the rays from
opposite directions and send them to a teleopposite directions and send them to a telescope placed before the balance. At the two sides of the balance two scales are set (but on the walls of the room); the images of these scales move in the field of the telescope beside each other in opposite directions, and so the corresponding divisions can be read off. These readings are independent of vibrations of the telescope, and are much more exact than those with teleare much more exact than those with telescopes and cross threads, not to speak of the common pointer. The arrangement also permits of the center of gravity of the balance being placed lower, the stability increased, &c. The weight of the balance is about 44 pounds, though both scales can carry 44 pounds weight.

Prof. Wickersheimer, who recently sold his process for preserving organic substances be the Prussian government, has patented

patented

A PROCESS FOR PRESERVING MEAT

A PROCESS FOR PRESERVING MEAT for eating purposes. A solution (heated to 50°C.) of 36 grams potash, 15 grams common salt, and 60 grams alum, in 3 liters of water, is mixed with a second solution of 9 grams salicylic acid in 45 grams glycerine is added. With this liquid the animal to be preserved is injected. In the case of small animals, 100 grams of the liquid for every 1 kilo. body weight, is recommended; in larger, the proportion may be reduced to 40 grams. Fishes, birds, and such small animals are not previously killed, but the injection made direct into the heart with a syringe having a sharp canna. Large anisyringe having a sharp canula. Large animals are injected immediately after slaughtering, the liquid being introduced by one of the large cervical arteries. For cattle and swine, 2 to 3 grams saltpeter is added to the liquid. The flesh of animals so treated beautiful in said two to three waters now. keeps (it is said) two to three weeks perfectly good and inodorous. If the preservation is to be for a longer time, the propor-tions of methylic alcohol, salicylic acid and glycerine are somewhat increased



ANDREW KLOMAN, OF PITTSBURGH.

table, carrying a series of cooling boxes for the purpose of receiving slag from the furunsightly mess usually made in running

slag out on the ground.

The universal mill for rolling heavy and long bridge plates next received his attention. He introduced this feature into the But Union Iron mills with his usual success. Perceiving the economy of reversing the mill, he devised and built an ingenious clutch for alternately reversing the motion of the mill, while the large engine run in

Smith, and several other prominent iron the fact that the demand for structural steel and prompt in its action, and i manufacturers, purchased a large tract of was rapidly increasing, and that their own to serve a very useful purpose. land in the Lake Superior region, and built facilities for furnishing such steel were a charcoal furnace of 14 feet bosh, at inadequate, thereupon decided, mainly Escanaba, and developed the Cascade mines.

the purpose of receiving snag from the furnace, thus size for carrying off from the furnace, thus size for carrying off from the space about the members for the Glasgow (Mo.) bridge, the carrying off the space about the sp he leased the old Superior Mill in Allegheny City, and put in his machinery for rolling country, which was followed by the steel superstructure for Niagara River Suspension Bridge, and the all-steel channel span of the of the above-named law of diffusion, enters lattsmouth bridge.
But the cares of business and the death of

his wife in the spring of 1879 began to de-press his mind, and he suffered much from ill health for the last year and a half of his life. Notwithstanding this, he still attended closely to his business, and in the fall of 1879 one direction only. This invention was fully he projected the erection of a mill of his described in The Metallurgical Review and in own, where he could carry on the manufac-The Iron Age.

In 1872, Mr. Kloman, in connection with Joseph Kirkpatrick, Wm. Bagaley, Wm.

ture of steel structural material in a more satisfactory way. Other prominent steel manufacturers of Pittsburgh, recognising make it if they could pay enough to justry the necessary expenditure. The price was agreed upon, and in a short time the rolls were ready and the largest rolled shape ever were ready and the largest rolled shape ever lind, yet this venture finally proved his name at scientific meetings in Paris with The Education of Mr. Kloman determined to erect plant. Mr. Kloman determined to erect in the second of a new Bessement plant. Mr. Kloman determined to erect in smill contiguous to and in connection with this new enterprise. A site was selected the several lamps in the second of a new Bessement plant. Mr. Kloman determined to erect in smill contiguous to and in connection with this new enterprise. A site was selected the several lamps in the second of the liquid on his hat and lights it, where and the work of erection was pushed as rapidle to a severe proof strain before being so soon after the venture had been started, and a career of usefulness, Mr. Kloman was the instigation of Mr. Kloman, the necessary expenditure. The price was although the mines promised very richly at the green plant. Mr. Kloman determined to erect in the sessence burns which is offered for lighting purposes. Having arranged on the table several lamps in this mill contiguous to and in connection with this new enterprise. A site was selected near Homestead, adjoining the Pittsburgh in a new to a new Bessemen which is offered for lighting purposes. Having arranged on the table several lamps in the rolls was about 30 the fame of the liquid on his hat and lights it, where and the work of erection was pushed as rapidly as possible. In the midst of a busy life and the furnation of Mr. Kloman determined to erect which the essence burns which it is offered for lighting purposes. Having a near flowed almost his mill contiguous to and in connection with this met a scientific meeting in the same of the liquid on the table several lamps in the rolls was about 30 the liquid on his hat and light in the rolls was scientific meeting in the liquid on the table

volume of the blast and making the pressure a secondary matter, was entirely an original idea with him, and is now universally adopted.

He also invented and patented a rotary table, carrying a series of cooling boxes for the purpose of receiving colong to the purpose of the purpose of receiving colong to the purpose of the purpose of the purpose of receiving the purpose of the p is provided, having its back formed by a disk of terra-cotta, this chamber being pro-vided with a small stop-cock, by which its interior can be placed in communication with the outer air. If, when this stop-cock is closed, the indicator be taken into a room where a gas leakage exists, the gas, in virtue the chamber through the terra-cotta disk more rapidly than the inclosed air escapes, and the pressure in the chamber con-sequently rises. This increase of pressure sequently is utilized to move a hand on a dial at the front of the instrument, each pressure cor-responding to a certain percentage of gas in atmosphere in which the indicator is ced. The dial is graduated from 0 to 35 per cent. of gas, and is moreover marked to show when the mixture is and is not ex-plo-ive. The instrument is very sensitive and prompt in its action, and it is calculated

Herr Kordig, a Hungarian, has lately been performing some very curious experi-ments at scientific meetings in Paris with

#### The Production of American Steel Works in 1880.

So much interest has been expressed recently in the work of American steel mills during the past year, that the following data, for which we are indebted to the court the managers of the respective works, are

In the converting department of the North Chicago Rolling Mill Company, at Chicago, the best day's work made during the course of the year was 531.73 gross tons in 84 heats; the best week's work, 418 heats, or 2645 tons, and the best month's work 1683 hears, or 10,890.69 gross tons. The two 6-ton converters of the establishment turned out during the year, in all, II turns per week, 100,178.88 gross tons of ingots In the steel-rail mill, 444.37 gross tons, or 2000 rails, weighing 50 pounds per yard, were rolled during the best day, 2232.68 tons during the best week, 9235.41 during the best month, and 84,845.58 during the entire

The Lackawanna Iron and Coal Company. at Scranton, with two 5-ton converters, produced 105,354 gross tons of ingots during the year, and turned out, as finished product, 84,361 tons of rails and 228 gross tons of merchant steel.

The Joliet Steel Company, with two 614 ton converters, produced 116,000 tons of ingots and 97,000 tons of rails.

The Edgar Thomson Works, as we have dready reported, succeeded in casting from their two 7 ton converters 123,303 tons of ingots, and in rolling 100,094 tons of rails and producing 4263 tons of merchant steel

The Thomas dephosphorizing process is being used in the open-hearth at Creusor

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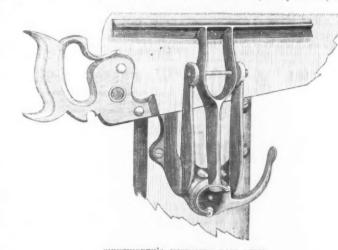
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Wentworth's Improved Saw Vise.

The accompanying engraving illustrates what is known to the trade as Wentworth's patent saw vise. It is constructed with a flexible rubber cushion or muffler between the jaws, which prevents any vibration during the process of filing, and, therefore, renders the operation noiseless. By its use that terrible screeching, usually attendant upon saw filing, is entirely overcome. The upon saw filing, is entirely overcome. The the tool entire, ready for use, is \$7.



WENTWORTH'S IMPROVED SAW VISE.

New Britain, Conn. cam lever, which is shown in the engraving.
This lever is so arranged that it will hold
the jaws open at any position, as well as
fasten them shut. In use it is secured to a
work bench by screws, or, instead of
being attached to the bench, may be put up
in any place desired. The manufacturers'
agents are Messrs. C. N. Marcellus & Co.,
69 Varick street, New York.

jaws of the vise are 10 inches long, and are manufactured by the Stanley Rule and made to open and close by simply turning a Level Company, of New Britain, Conn., and cam lever, which is shown in the engraving.

The Hardware Trade of Chicago in 1880,

The Chicago Tribune, in a review of the business of that city during the past twelve months, says of the hardware trade: The season has been a varied and excited

Adjustable Dado, Filletster Plow, Etc.

This tool embraces, in small space, an ingenious combination of several tools, which in the old form would nearly fill a carpenter's chest. The parts being made of iron or steel, no change in form can result to them from weather or other cause, and no amount of use can wear them out. The tool, which is represented in Fig. 1, consists of two sections—a main stock, A, with two bars or arms, B, and a sliding section, C, having its bottom or face level with that of the main stock.

It can be used as a dado of any required width by inserting the suitable bit into the

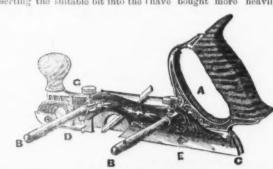


Fig. 1.—Trant's Adjustable Dado, Filletster, Plow, &c.



Fig. 2.—Guard Plate to Trant's Adjustable Indo, de.

above.

A filletster may be had by detaching the guard-plate II (Fig 2) and turning it end for end. The thumb-screws F must be reversed, o as to bring their heads on the outside of the sliding section C, and the flanged end of each screw will then have its bearing in the s on the inside of the slots E. Then tighten up the screws, and a fence will be formed for regulating the width of cut, while the parallel bottoms or faces of both sections will be left so as to rest on the work. With the 1½-inch cutter inserted in the main stock, the fence may be moved

and secured so as to give any required width of eat, from 1½ to 5-16ths inch.

As a matching plane, the fence is used in exactly the same form as on the filletster; the heads of the thumb-screws F are on the outside, and the parallel bottoms or faces of both sections rest on the work. Insert the tonguing tool in the main stock A, and slip the extra iron gauge, which accomplished the first three months being heavy. In heavy hardware and iron the tonnage sold was 20 to 25 per cent. greater than in 1879. The market was greatly disturbed early. The great iron boom that started in July of the previous year continued through the first three months of 1880, and exhibited the full depth is reached, and the required the big imports and the large output of do-

main stock A, and bringing the outside edge of the sliding section C into line with the bit. The two steel spurs, one on each section of the plane, will thus be exactly in line with and in front of the two edges of the bit. The gauge D on the sliding section, regulates the depth to which the tool will cut.

If the tool is to be used as a plow, remove the gauge D, for regulating the depth of cut, \$24,500,000 in 1879.

If the tool is to be used as a plow, remove the gauge D, for regulating the depth of cut, to the socket on the right-hand side of the main stock A at G. The guard-plate H (Fig. 2) should be attached to the sliding section C by means of the thumb-screws F. The flanged ends of the thumb-screws F are The general market was early very sensitive to every change in iron, and most staples advanced with that metal dur-ing January and February. When the crash came in iron, hardware was quick to follow and was not very steady before August when prices were nearly as low as they had been before the big advance of the previ fall. The break had a stunning effect ear passed from the outside through the slots E in the sliding section C, and by giving these screws a turn to the left, the two parts will be firmly secured together, and their inside faces be exactly flush with each other, thus forming a fence for the plow. Insert such bit as is needed in the main stock A, and scenre the fence at any desired point on the scenre the fence at any desired point on the scenre the fence at any desired point on the scenre the fence at any desired point on the scenre the fence at any desired point on the scenre the fence at any desired point on the scenre the fence at any desired point on the scenre the fence at any desired point on the scenre the fence at any desired point on the scenre the fence at any desired point on the scene that the scene that the first two months of the year, when the boom was at fever heat, was largely wiped out in the next four; but in the past six months trade has been uniformly heavy and fairly satisfactory to jobbers and all concerned in it. The early losses fell largely on specbars, by use of the brass thumb-screws it. The early losses fell largely on subbove. to replenish stocks at high figures, and lost

Nails opened at \$4.50 rates, and were advanced by factory men to \$5.25 to \$5.50 in this market, which followed the changes in the Pittsburgh card. They tumbled with iron, and the decline was accelerated in the spring by the pressure on the market of large lots that had been held by speculators. Competition from the big mill at South Chicago has helped to cheapen nails. The market declined to \$2.80—more than 48 per cent. from the highest rate—and closed and secured so as to give any required width and secured so as to give any required width steadier at \$3 rates, with stocks reported not large at any place. Trade in nails dur-

slip the extra iron gauge, which accompanies, each tool, on to the upper end of the spindle of the ordinary gauge D, when inserted in the socket on the right-hand side of the main stock at C. The hooked form of the iron gauge will give it a bearing directly on top of the tongue when the first three months of 1880, and exhibited symptoms of weakness a little before April 7, in consequence of the heavy importations from Europe. As soon as it became evident that the boom had spent itself, large speculative lots were thrown out, and these, with symptons of weakness a little before April 1, in consequence of the heavy importations from Europe. As soon as it became evident Aron.

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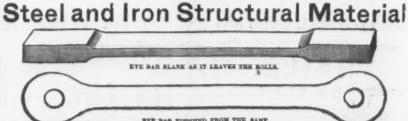
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mestic manufacturers, soon glutted the market. From April to August prices had de-clined 45 to 50 per cent., reacting in Septem ber; this change was not sustained, but rates advanced in December. The highest rate on common bar iron was \$4.40 carly in the year, and the lowest \$2.20 to \$2.25 in summer; the present rate is about \$2.50. Money was made rapidly and in big sums in the first quarter, but a good deal of it was lost in the subsequent heavy shrinkage. The trade, having made contracts long before the boom had reached its hight, did not shoulder the full burden of the declin. and have made money in spite of the falling market. The enormous demand from railroads has doubtless prevented iron from de-clining still more. The railroads have used than in any former one. The general demand has been unusually heavy, extending through December even, and the tone now is strong, with manufacturers refusing to make contracts for spring delivery except at higher rates. The market is now believed to be in a healthy condition. It is not expected that the protectionists will run prices

pected that the protectionists will run prices of iron up again very soon to a point that will permit free importations from all the exporting countries.

Nearly all the heavy goods sympathized with iron. Steel declined, and is at present nearly down to the prices that ruled prior to the bulge. The best American tool steel is now 12½ to 13 cents per pound. Owing to a sharp fight among manufacturers, bolts of all kinds are sold for nearly the cost of production. Carriage bolts were billed at 60 per cent. off early, while now the disproduction. Carriage bolts were billed at 60 per cent. off early, while now the discount is 80 per ceut., which makes them just one-half the price of the first part of the year. Wood or wagon stock has advanced steadily, owing to its growing scarcity. The Western iron mills now furnish most of the stock that is sold here. The difference in freight enables them to undersell Pittsburgh, which is now depended on chiefly for light sizes. The sales of iron, heavy hardware, wagon stock and railroad supplies, excepting rails, are estimated at \$10.000,000,000, and the capital employed at \$10,000,000, and the capital employed at

\$3,000,000.

The dealers in saddlery hardware report The dealers in saddlery hardware report an active country demand for goods, espe-cially from the West; and a marked change for the better in the city trade, especially in harness goods. Winter articles have been a little slow, owing to the fact that retailers had stocked up heavily the previous autumn, and carried a good many goods over to this season. These goods generally felt the effects of the iron boom, advancing about 50 per cent. from the lowest range in the previous year, and receding 25 per cent. subsequently. In saddlery and harness goods there are four houses. The competition is sharp, and the market is a very popular one with buyers, who have almost forsaken New York and other Eastern headquarters. One factory is running here successfully, and there appears to be room for others. The three cabinethardware houses increased their business, and prices were quite steady after the early decline. The sales of saddlery, harness, cabinet goods, &c., approximated \$2,000,-

Scientific Terminology.-Monstrosities of diction, says the London Globe, are not confined to chemical science, but are to be found in physics as well as metaphysics. We recently gave some samples of the ex-traordinary and absurd length to which the traordinary and absurd length to which the names of certain organic salts had grown, and we may now add the following choice specimen of imagery (from a recently published paper by Sir William Thomson) to illustrate the grand style in modern natural philosophy. "The stream lines" says the distinguished Glasgow physicist, "are represented in the diagram, in which the region of translational-velocity greater than wave-propagational velocity is separated from the region of translational-velocity less than wave-propagational velocity by a cat's-eye border pattern of elliptic whirls." The curious mixture of homely simile and The curious mixture of homely simile and abstract terminology in this passage is highly ludierous. Its obscurity is, however, sur-passed by Mr. Herbert Spencer's famous "Formula of Evolution," which runs: "Evolution is a change from an indefinite incoherent homogeneity, to a definite, coher ent heterogeneity, through continuous dif-ferentiations and integrations," which being interpreted into plain English by Mr. Kirkman, the mathematician, means: "Evolu-tion is a change from a nohowish, untalkaboutable all-alikeness, to a somehowish, and in-general-talkaboutable not-all-alikenes, by continuous something-elsefications and sticktogetherations." As a clever travesty on the above cacophonous mystification of Mr. Herbert Spencer, which, like the language of diplomacy, conceals the meaning it ought to express, we have Mr. Kirkman's "Formula of Universal Change," which is: "Change is a perichoretical synechy of pamparalagmatic and porroteroporeumatical differentia-tions and integrations." After such pedantry as this, the clown in Shakespeare's "Twelfth Night" who "did impeticos thy gratility" is absolutely nowhere.

A number of English coal mines are being worked under the ocean. In Northumberworked under the ocean. In Northumber-land the net available quantity of coal under the sea is estimated at 403,000,000 tons, and on the Durham coast under the sea, includ-ing a breadth of 3½ miles with an area of 71 square miles, 734,500,000 tons. The lat-ter mine is in a vein of an aggregate thick-ness of 30 feet, distributed in six seams. En-gineers are considering how it can be worked successfully in the future.

A correspondent of the Engineer describes a new method for repairing cracks in boilers invented by a German, Herr Knoelke. It consists in the use of a sort of wedgelink—a pair of tapered pins connected with each other in one solid body by a flat wedge.

In a few days an electric head-light for locomotives will be tried on the Cleveland and Pittsburgh Railroad. The power will be furnished by a small engine placed behind the smoke stack and supplied with steam from the main boiler.

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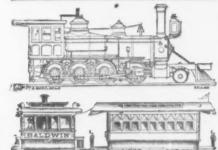
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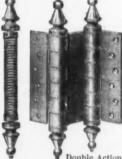
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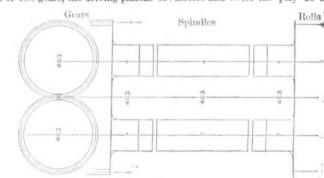
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In designing a rolling mill, let it be sup-posed that in an elevation parallel lines be drawn through the centers and the point of

| Diameter, bott<br>Groove (twice | tom roll | I.        | II.<br>444<br>32 |
|---------------------------------|----------|-----------|------------------|
| Closing (twice                  | 15)      | go (cwice | 251 50           |
| Diameter, top                   | roll     | 546       | 556              |

As twice the distance of rolls is 026 millicontact of two gears, the driving pinions of meters and twice the play 20 millimeters,

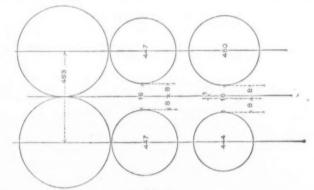


two high rolls. In order to bring the axes of rolls, spineles and pinions into one line and make them parallel, and yet give the top roll the slight increase of diameter required, it would be necessary to set the center line, if a flat groove, for instance, below the pitch line by one quarter of the hight we have 546+20=566, and 556+20=576, and therefore:

I a Ha Hilmeters.

Millimeters. 926 -566 -566 -576 360 350





of the groove. The top roll in every groove must be larger in diameter than the bottom roll, so that the rolled bar may oe stretched but little by the increased speed of the top roll, and so that the bar leaves the groove without turning around the top roll. Downward the bar is led by guards lying in the groove upon the bottom roll. Thus, for grapping if the centers of the principles. example, if the centers of the pinions of a two-high mill are 463 millimeters apart (Fig. 1). the distance between the axes of the rolls and spindles will be the same, 463 millime-ters. But if, for instance, the top roll must



be thicker by 6 millimeters than the botbe thicker by 6 millimeters than the bottom roll for a groove 16 millimeters high, the diameter of the top roll will be found to be: 463—16—6-2=450 millimeters, while the diameter of the bottom roll is: 463—16—6-2=444 millimeters. Thus the distance between the axes of the rolls is not altered, the center line of the groove only having been moved below the pitch line by 6-4 millimeters.

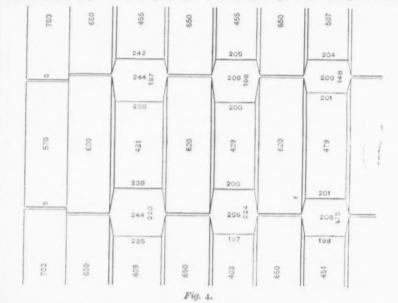
Twice 
$$_{41.5} = \frac{_{46_3}^{6_3}}{_{83}}$$
 Twice  $_{46.5} = \frac{_{46_3}^{6_3}}{_{93}}$ 
Twice  $_{51.5} = \frac{_{10_3}^{6_3}}{_{10_3}}$  Twice  $_{56.5} = \frac{_{46_3}^{6_3}}{_{350}}$ 

The calculations for three-high rolls are similar for such mills in which the axes of the rolls pass through the centers of the gears. The middle and top rolls are first calculated, and the fixed dimensions of the middle roll are used for finding these of the bottom roll by regarding them like a pair of two-high rolls, the distance of the axes of which are equal to the distance of the pitch

In the present systems of designing three-high rolls, the important fact that the axes of the rolls should pass through the center of the pinions is left out of consideration. Taking, for instance, the oldest system of roughing rolls with Gothic grooves for a 9-inch train, and it is found that the top roll has a diameter of 9\% inches, the middle roll, 9\% inches, and the bottom roll, 8\% inches; and that, therefore, between the axes of the top and middle rolls the distance is 9\% inches, while between those of the middle and bottom roll it is 9 inches. Meanwhile, the distance of the center lines of the In the present systems of designing threewhile, the distance of the center lines of the pinions is equal—9 inches. It is, therefore, necessary to design top and bottom roll on the basis of a distance of 9¼ inches, and middle and bottom roll on the basis of a distance of 9 inches. The result of this method of construction is necessarily that the spindles run out of line and that the back plates are stationary.

A modification of this method was intro-

A modification of this method was intro-duced by Biedermann for rolling flats or hoops in three-high mills. Although he gains the advantage of having stationary guards and of using the middle roll once to form the groove and the collars for another time, the spindles and boxes break down frequently, pinjons wear out unevally teeth frequently, pinions wear out unevenly, teeth It follows, therefore, that all measures for cost of maintaining the bearings is high and dimensions may be got out of the pitch line, there is little space for raising the collars,



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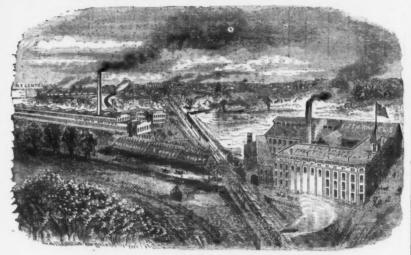


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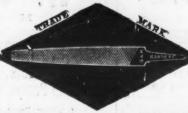
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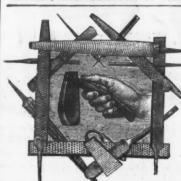
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HAND OR POWER White Mountain Freezer Co., 875.00 And \$175.00 Laconia, N. H., U. S. A. SPE MAL ATTENTION GIVEN TO EXPORT ORDERS.

New York Salesroom, 116 Chambers Street. AMERICAN TACK CO., Fairhaven, Mass.

# A. FIELD & SONS,

TAUNTON, MASS.,

MANUFACTURERS OF

## AMERICAN AND FRENCH

# WIRE NAILS.

TACKS, SHOE NAILS,

And Every Variety of Small Nails.

Offices & Factories at Taunton, Mass.

Warehouse at 78 Chambers St., New York,

where may be found a full assortment of Tacks, Brads, Wire Nails, &c., for the accommodation of the New York Wholesale and Jobbing Trade.

🔝 Any variations from the regular size or shape of the above-named goods made from sample to order. 🚁

A SILVER MEDAL has been awarded above goods at the Paris Exposition, being the only medal awarded any American manufacturer of Tacks and Wire Nails.

#### PREMIUM **ELEVATOR BUCKET.**



ALWAYS FIRST COMPETITIVE



The Storehouse Bucket, in sizes from 12 to 17 in.

PREMIUM IN

TESTS.



The Mill Bucket,

# This Bucket is struck out from the best charcoal iron; consequently is very durable. It requires 50 per cent. less power to run it than the old-fashioned square bucket, and will outwear half a dozen of them. Over 300,000 are now in use by the principal Millers, Brewers, Maitsters and Manufacturers at home and abroad. It is the best Bucket male. CAUTION.—The popularity of the DUC BUCKET has caused many manufacturers of the old style of Elevator Bucket to closely initiate its spherical shape. We warn all parties against patronizing infringers of our patents, as they will be held accountable. Send for circular. Address T. F. ROWLAND, Sole Manufacturer, Continental Works, BROOKLYN, N. Y. TITITI

# OLD COLONY RIVET CO., Kingston, Mass.

Manufacturers of NORWAY IRON RIVETS of Superior quality.

We carry a large stock of the various sizes of Tinners', Carriage, Wagon, Hame, Belt, Barrel, Safe and Tank Rivets, and make promptly to order all sizes not larger than 7-16 inch diameter. We have a capacity of two tons of the various sizes of small Rivets per day of ten hours. Freight allowed to all points on or east of the Mississippi River. Correspondence with buyers solicited.

WILLIAM H. DUNBAR, President.

HENRY HOBART, Treasurer.

JAMES L. HALL, General Agent and Manager.

We carry the most complete stock in the city with our New York agents, The American Tack Co., 116 Chambers St.

NEW AND IMPROVED PATENT



The cutting parts are made to gauge, of choice steel. They can be taken off to be ground, and when worn out can be replaced at a slight expense, making the tool as good as new.

This improvement makes the tool the best and cheapest that you

All extra cutters warranted to interchange.

The center of rivet being only three-fourths of an inch from the cut

ting edge, they have nearly double the cutting power of most other kinds. FLAGLER, FORSYTH & BRADLEY, COULTER, FLAGLER & CO.,

87 Chambers and 69 Reade Streets, New York.

THE

# Sprague Novelty Works

15, 17 & 19 North Water Street, ROCHESTER, N. Y., Manufacturers of

#### Hardware Specialties, SPRACUE'S

"Perfection," "Combination" and other Razor Strops. Refer to The Iron Age first issue of each month.

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REVERSIBLE SELF-PACKING AND SELF-CLEANSING

## FILTER.

CROCKER FILTER CO., 174 High St., Boston, Mass.

W. E. PUFFER, General Selling Agent for the

# THE ANSONIA CORRUGATED STOVE PLATFORM.

With Patented O. G. Border.



Cut Showing Round Platform

ROUND ZINC. 27, 30, 32, 34, 36 inch.

Manufactured of heavy metal, requiring no nailing or lining, the edge retaining its form. Superior pattern, finish and quality, Price as low as any.

Send for List and Discount. Packed 12 in each case.

#### PURE ELECTRIC WIRE

ANSONIA BRASS AND COPPER COMPANY,

For Magnets, Telegraphs, Telephones, &c.

Insulated on the bare wire with H. Splitdorf's patented Liquid Insulation, covered with cotton or silk.

All sizes of Bare and Covered Wire in Stock.

The conductivity of every bundle tested and warranted THE ANSONIA WROUGHT GONGS,

subjected to injurious strains. Thus, in the C roll (Fig. 6) may be exchanged if subjected to injurious strains. Thus, in the first groove (1½ inches high) the diameter of the bottom roll is 7¾ inches, compared to 9½ for the middle roll—a difference which is by far too great, as usually half an inch is ample. The circumference of the middle roll and make one-half of the rolls A and C like spindles (Fig. 7), a thing which is not posaroll has, therefore, a much greater speed and the upper surface of the bar is too much stretched. This cannot be remedied, because otherwise the roll becomes too thin in other parts.

A better method for a roughing train other parts.

A better method for a roughing train speed, it may be used with other kinds also.

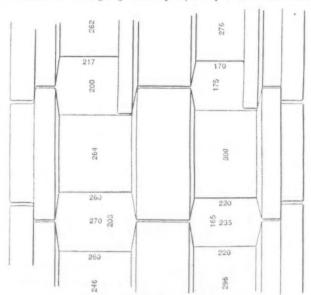
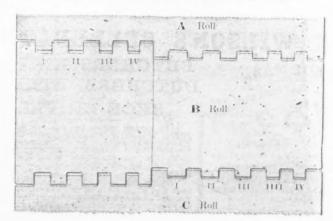


Fig. 5.

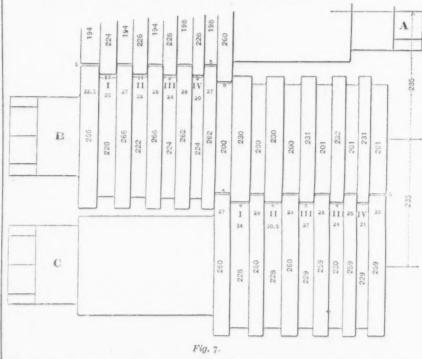
with box grooves is shown in Fig. 4, though it also displaces the center lines of the rolls in reference to those of the pinions. It is used upward and downward, without skipping any groove or turning the pile or ingot. In the middle of the middle roll the curve is wider than that of the bottom roll and narrower than that of the bottom roll and narrower than that of the top roll, so that fins that are formed are pressed down. As there are no blanks, the whole length of the rolls is utilized. The guards are stationary.

A more recent method, used chiefly when,



as in the case of welding iron piles, the pile must be turned as often as possible during the first passes, and box grooves are wanted for the majority of the diffrent sizes of the pile, is to form the upper grooves by means of the middle roll, and make the latter larger throughest product through it never strike unwelded spots, as for middle roll, and make the latter larger throughout then beth too and better.

of the middle roll, and make the latter larger throughout than both top and bottom roll. This brings rolls and pinions into line. The method is now in use for all kinds of finishing trains. There are blank alternate grooves, and in the case that top and bottom rolls are equal, they can be exchanged when worn out, so that the blanks can be



used as grooves. The main disadvantage the furnace showed no sign of deterioration of this system is that it cannot be used for or of breaking, being removed only because trains running at a higher speed than 150 the manager thought it had been in long

For Clocks, Indicators, Telephones, Call Bells, Bell Punches, Steamboat and Rutlroad Use. Burnished or Nickel Plated.

ANSONIA BRASS AND COPPER CO., 19 Cliff St., New York.

ANSONIA BRASS AND COPPER CO., 19 Cliff St., New York.

of this system is that it cannot be used for trains running at a higher speed than 150 revolutions per minute, because the hanging guards necessary for the top rolls are dangerous. An example is shown in Fig. 5.

It is for this reason that the hanging guards have been abandoned in a new system to which I desire to call attention, and which was first designed by me in 1876.

This is accomplished by dividing the middle roll into two parts by the introduction of an example system.

Cutlery.

# FRIEDMANN & LAUTERJU



PEN AND POCKET CUTLERY,

Solid Steel Scissors, Shears, Razors, &c. "ELECTRIC RAZORS,"

And the "ELECTRIC SHEARS." Nickel Plated Agents for the BENGALL RAZORS.

AMERICAN TABLE CUTLERY, BUTCHER KNIVES, &c. 91 Chambers and 73 Reade Sts., N. Y. 423 N. Fifth St., ST. LOUIS, Mo.

MERIDEN CUTLERY COMPANY.

THE "PA JENT IVORY" HANDLE TABLE KNIFE,

The oldest manufacturers of Table Cutlery in America. Exclusive makers of the CELLULOID HANDLI for Table Cutlery. A most beautiful and perfect substitute for Ivory. Also makers of all kinds of TABLE BUTCHER AND HUNTING KNIVES. Illustrated catalogues with prices sent to the trade on application SALESROCM, No. 49 Chambers St. N. Y. Address all communications ro West Meriden, Cons.

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Salesroom and Warehouse,

88 Chambers Street, New York City. Shelburne Falls, Mass. Superior Cutlery of all kinds and grades, from the finest in pearl and ivory handles to the lowest price in wood and from handles. OUR

BUTCHERS' and HUNTERS' KNIVES Are warranted to be equal in style, finish and quality, to any goods made in the world.

"COMPARE, THEN JUDGE." We are the sole owners of the Gardner Patent Guard and Rest for Carving Forks, and the manufacture of fine carvers is with us a specialty.

AARON BURKINSHAW, Pepperell, Mass.,

PRUNING, BUDDING AND POCKET OF EVERY DESCRIPTION.

My Blades are forged by hand from the best cast steel and warranted.

## JOHN WILSON'S CELEBRATED



GRANTED A D 1766 BY THE CORPORATION OF CUTLERS OF SHEFFIELD AND PROTECTED BY ACT OF PARLIAMENT

RECISTERED ALSO AT WASHINGTON U.S.A ACCORDING TO ACT OF CONCRESS

ALSO AT LEIPZIG, IN ACCORDANCE WITH THE GERMAN TRADE MARKS REGISTRATION ACT.

BUTCHERS' KNIVES, BUTCHERS' STEELS, SHOE KNIVES.

It having come to the knowledge of JOHN WILSON that Counterfeit Butchers' Kniyes, purporting to be of his manufacture, are being sold in the United States, he hereby cautions all purchasers of his Knives and Steels to be on the alert against such imposition.

JOHN WILSON also hereby gives Notice that it is his determination to institute Lego Proceedings against any person or persons when may be detected infringing his Trade Mark.

Every article of JOHN WILSON'S manufacture, bears the Trade Mark, in addition to the Name.

WORKS:-SYCAMORE ST., SHEFFIELD, ENGLAND. Established 1750.

## SEYMOUR'S Diamond Edge Solid Cast Steel

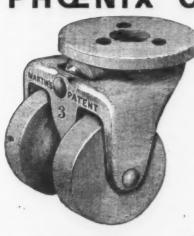
SHEEP SHEARS. GREAT TRIUMPH OF AMERICAN INDUSTRY.



Every Pair Warranted Superior to Imported. Price lists sent on application HENRY SEYMOUR CUTLERY CO., Holyoke, Mass.

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Indianapolis, Ind.

Kellogg, Johnson & Bliss, Chicago, a re tail house, sold our Casters as follows: 334.22 505.66

They are no experiment. They are as safe and good stock as 8d. nails. Their value will grow on you if you will introduce yourself to them.

## PHŒNIX CASTER CO.,

Manufacturers,

INDIANAPOLIS, IND.



TALY WROUGHT IRON ADJUSTABLE LEAVENWORTH, KADBAS, Jan. 15. 1881. A Please send us 24 Daisy Stove GREAT WESTERN STOVE CO. TRUCK TUCKER& DORSEY, MANUFACTURERS, INDIANAPOLIS, IND.

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ALFRED H. HILDICK, 12 Warren St., N. Y., Importer of CHAINS, ANVILS, VISES, &c.

Agency of
HILL BROTHERS & CO., WALSALL, ENGLAND
GENERAL HARDWARE MERCHANTS,

BALL'S PAT. SOLID STEEL SHEEP SHEARS. These shears are unsurpassed for cheapness, dura slitty and utility. They are made of one solid piece of steel from point to point, and cannot be broken in see either in the bow or at the junction of the shank and blade. Samples can be seen at above address, or ample lots turnished.



Joseph Rodgers & Sons

CELEBRATED CUTLERY, No. 82 Chambers Street, New York.

F. & W. CLATWORTHY, Agents. The demand for Joseph Rodgers & Sons's productions having considerably increased, they have, in order to meet it, greatly extended their Manufacturing Premises and Steam power.

To distinguish Articles of Joseph Rodgers & Sons' Manufacture, please to see that they bear their Corporate Mark.

#### P. O. Box 30tc. ESTABLISHED 1836. Alfred Field & Co., COMMISSION MERCHANTS,

New York, Birmingham, Sheffield, Liverpool.

#### Guns and Pocket Cutlery, SPECIALTIES.

Headquarters for

WLEVS BROS.' GOODS. WRIGHT'S ANVILS,
WLEOV'S BUTCHER KNIVES, &c.
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ENGLISH AND GERMAN GUNS,
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GREAVES' SHEEP SHEARS,
GERMAN COIL AND HALTERS and other CHAINS,
BRADES' TROWKIS AND HOES,
CANASTOTA KNIFE CO.'S POCKET KNIVES,
Etc.
All sorts of Hardware and Merchandise for import and export purchased on commission. Headquarters for

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SHEFFIELD,

Kangaroo Sheep Shears



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THE SLAYTON RAZOR.



of German Sliver, Nickel Plated. Blades of the Fin-steel in the World. Every Razer Fully Warranted.

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#### J. R. TORREY RAZOR CO., FACTORY, WORCESTER, MASS.



For Fine Cutting Qualities, and Adapta tion to all Beards, our

RAZORS Have no equal. Price Lists on application.

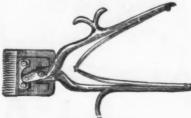
BOENTGEN&SABING HALF OPENED PATENT SPRINGLESS MARVEL POCKET KNIFE

FURNESS, BANNISTER & CO., NEWARK, N. J. Manufacturers of

#### CUTLER PRICES FURNISHED ON APPLICATION

Cutlery.

French Clippers



We are sole agents for these Clippers. All orders should be addressed to us to obtain lowest prices. Barber's Clipper.

McCOY & SANDERS

132 Duane St., New York.





J. R. SPENCER & SON. Albion Steel Works, Sheffield, MANUFACTURERS OF

FILES

STEEL Table Knives, Razors, Shovels, &c., &c., of every description.

CORPORATE MARK

Granted 1749.

#### B. WORTH, RAZOR MANUFACTURER.

Sheffield, England. FULL CONCAVE RAZORS A SPECIALTY. Cheapest House in the Trade. Price lists mailed free on application.



TELESCOPE TUBES. Fine Mandrel-drawn Tubes, from Brass or Genan Silver. Tubes for sliding one within the other KIN & CO., 500 N. 12th St., Philadelphia, makers of the American Improved Brass Garden Syringe

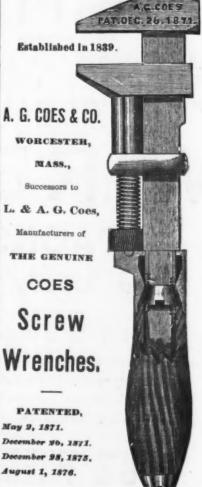
# CLOTHES WRINGERS.



T. J. ALEXANDER, Manager, BOSTON, MASS.



FORGED OX SHOES. The only Ox Shoe made with patent conravity to fit hoof. Also Fiar Shoes with rwo calls complete, at same price. Worth double any Malleable Iron Shoe. Greenfield Tool Co., Greenfield, Mass.



The backstrain when the wrench is used is borne by the bar-not by the handle. The strongest Wrench made and the only suc

easful Re-enforced Bar. None genuine unless stamped

A. G. COES & CO.,

Our Agents, GRAHAM & HAINES, 113 Chambers St., New York, carry a full line of our goods, and will be pleased to serve you at factory prices.

STANDARD GIRARD WRENCH.



GUARANIEED EVERY RESPECT.

Wrought Bar, Head and Screw.

Owing to the in-

creased demand for these justly Popular Wrenches. we are now manufacturing more than any other establish

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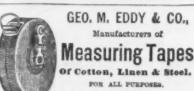
ment in the world.

SEND FOR TERMS and PRICES.

GIRARD WRENCH MFG. CO., Girard, Pa.



"DRAW CUT" Choppers, Hand and Power Stuffers, Lard Presses.
Warranted thoroughly made and the Best in Use. MURRAY IRON WORKS, Burlington, Iown.



351 to 353 Classon Ave., Brooklyn, N. Y. CHAS. E. LITTLE, 59 Pulton St., N. Y.



Solid Cast-Steel Pump Augers For Horing Pump Logs and Pump Tubing, with all necessary fittings. Agency for Barnes' Wood-Working Machiners and Lathes. but sh

# THE WM. ROCERS MFG. CO. Superior Silver-Plated Table Ware.



Post Office Address,

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NEW YORK OFFICE, NO. 100 CHAMBERS STREET.

HALL, ELTON & CO.,

Electro Plated Ware, German Silver and Britannia Spoons.



Factories, Wallingford Conn.

Salesroom, 75 Chambers Street, New York.

# HOLMES, BOOTH & HAYDENS,

# Finest Quality Silver-Plated Spoons, Forks, Knives, &c.



NOTICE.—We guarantee the base of our Spoons, Forks, &c., to be full 12 per cent. Nickel Silver, and extra heavily plated with pure Silver. Our goods are all hand burnished, and are first-class in every respect. We pack our Spoons and Forks one dozen in each box

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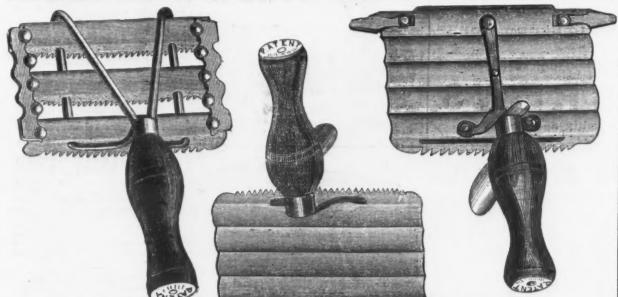
18 FEDERAL ST., BOSTON.

# T. G. CONWAY, 88 Chambers Street, New York,

REVOLVERS, BREECH-LOADING GUNS, TABLE CUTLERY, CAST IRON, NICKEL PLATED & STEEL SHEARS.

Representing THE LEE ARMS CO.,

THE GREENFIELD CO-OP. WORKS,



Our arrangement with Mesars. Graham & Haines as agents for our goods having expired, we shall hereafter have no agencies. but shall sell our own goods direct to the trade. you have inspected and priced our new lines, We are confident it will be to your advantage to defer buying any Combs until

"THE PIONEER,"

which we are manufacturing in connection with the "PERFECT," but which are not subject to the conditions governing the prices of the "PERFECT," and are universally acknowledged to be the best low-priced Combs ever offered to the trade. Catalogues with Discounts, &c., sent en application.

#### LAWRENCE CURRY COMB 309 EAST 22d STREET, NEW YORK.

INDUSTRIAL ITEMS.

MASSACHUSETTS.

The Wasburn & Moen Manufacturing Co.'s works in Worcester are doing a very large business at present. The demand for barb wire is said to have far exceeded the supply, even before the recent legal decision sustaining the company's patents. supply, even before the recent legal decision sustaining the company's patents.

CONNECTICUT.

A meeting of the corporators of The Capewell Horse Nail Company was held at the office of James L. Howard & Co. on Tuesday, and the company organized under the joint stock laws of Connecticut. The capital of the company is \$200,000, divided into two of the company is \$200,000, divided into two thousand shares of \$100 each. At a subsequent meeting of the directors the following officers were elected, viz.:—Frank L. Howard, president and treasurer; William H. Post, vice-president; and Albert L. Burke, secretary. The works of the company are to be located in Hartford, and the business will be commenced at once.—Hartford Courant. ford Courant.

At the Adams silk and cotton mill in Van Houton st., Paterson, a new 100-horse power boiler has just been put in. When the con-nections were finished and the wheels of the big globe valve was turned, to admit steam from the old to the new boiler to try it, the globe valve burst into a dozen pieces. John

globe valve burst into a dozen pieces. John Tracy, the boiler tender, was knocked over, but not seriously hurt. Charles Knoble was burned about the hand and arm. Thomas Wheeler was scalded in the face, and will probably lose one of his eyes. Charles Burchell was scalded about the neck. None of those injurned are likely to die.

In imitation of the many boilers that have exploded recently, a cylinder of the drill locomotive "Harry Beebe," on the Delaware, Lackawanna and Western Railroad, ourst in Newark a few days ago. The locomotive was running near Sheffield street when the explosion occurred. The report was like that of a large cannon. A fragwas like that of a large cannon. A frag-ment of iron was sent crushing through the window of an unoccupied house near the railroad. No one was injured.

PENNSYLVANIA.

The Pottstown Iron Company, of Pottstown, manufacturers of pig iron, boiler tank and ship plates, are full of business and employing two forces of workmen, and are running day and night in all their departments. Their pig iron is made from their own ore, and their boiler, tank and ship plates have a wide reputation for their their own ore, and their boiler, tank and ship plates have a wide reputation for their superior quality and finish, they being made on three-high chilled rolls. Their works are very extensive, comprising two blast furnaces, nail works and plate-iron works. They employ 1000 hands in all their departments. The nail factory has a capacity of 250,000 kegs per annum. In the other departments they make 13,000 tons plate iron, 30,000 tons pig iron and 28,000 tons of puddle bars, and have five rolling mills, and a cooper's shop, for the manufacture of nail kegs, connected with their works. During the panic they were kept in steady operation, and the employees were promptly paid their wages every pay day. The idea of running a nail factory by night was a new feature of the business, but by the aid of the electric light, which was first tried in the nail department as an experiment, and which proved a success, its practicability has been demonstrated, and the electric light has since been furnished throughout their entire works. They have lately fitted up a building for office purposes, which is connected by telephone with all the different departments of their works.—Commercial Bulletin. departments of their works.—Commercial Bulletin.

The board of directors of the Thomas Iron

a number of years past, but which was re-cently put in operation, is now in full blast rning out about four tons of iron per The iron is used day of a splendid quality. in the manufacture of car wheels, for which it is in great demand. Owing to the heavy fall of snow the proprietors were unable to get in their full supply of charcoal, and some tears are entertained that they may run out of fuel before a supply can be obtained .-

The blast furnace of the Pottstown Iron

ompany is undergoing repairs.
A. K. Lorah, of West Chester, and David Williams, of North Coventry, Chester County, have leased a tract of land in Pottsgrove township for the purpose of working vein of copper.
The Philadelphia Shafting Works, Geo. V.

Cresson, proprietor, have all the business they can attend to.

PITTSBURGH AND VICINITY.

It is rumored that the Pittsburgh Steel Casting Company intend erecting a 5-ton

Bessemer plant.

Oliver Bros. & Phillips report that there has been a decided improvement in business since last week. They are running full in

Mackintosh, Hemphill & Co., Limited, are erecting an open-hearth steel plant for making steel castings by the Terrenoire

Williams, Long & McDowell are running the near future. They have just placed a new set of muck rells, made by Robinson, Rea & Co., in position, and find that these

are working very nicely.

Just now the Etna Iron Works Co. at Etua, are engaged at boring two new gas wells near Saxonburg, about 13 miles from the works, whence a supply of gas has been received for about 5 years. The company find their supply of gas to be inadequate for the late additions to the works,

give a still better record with the milder batch of the flint-glass house. The same gentleman is experimenting on crucibles for steel melting. If his success with these equals that he appears to have reached with glass pots it will be of great benefit to the steel trade.

which are operated in every department. This company has made great experiments in boring for gas. Their first attempt was a well 2500 feet deep at the works, but a salt water vein was struck, which yields about 8000 barrels water every 24 hours. The second attempt at the above-named place gave them abundant gas.—Commercial place gave them abundant gas.—Commercial

engines for a Texas railroad. A new loco-motive has just been completed for the Soho motive has just been completed for the Soho Furnaces, and one is now being made for the Lucy Furnace, which will be the third locomotive made for that furnace. They also have orders booked from parties in Philadelphia, South Carolina, Alabama, New York, Michigan, Mississippi, Texas and Kentucky.

It is rumored that a part interest in the Lucy Furnaces has been sold to Wilson

Lucy Furnaces has been sold to Wilson,

Lucy Furnaces has been sold to Wilson, Walker & Co.

At the Crescent Tube Works the night turn has been taken off for two weeks, in order to facilitate taking stock.

Totten & Co., founders, have all the work on hand that they can attend to. There is quite an active demand at present for their crusher and pulverizer.

A. A. Hutchinson & Bro. have sold 145 coke ovens and some property at Bradford

coke ovens and some property at Bradford to H. C. Frick & Co. for \$225,000. At the meeting of the Western Flint and

At the meeting of the Western Flint and Lime Glass Protective Association, held on Monday, the old officers were re-elected, viz. President, John Adams; vice-president, Wm. C. King; secretary, Paul Zimmerman; treasurer, D. C. Ripley; additional managers, A. H. Heisey and Wm. Doyle. Actuary Joseph G. Walters was re-elected. The association was never in a more prosperous condition.

It is reported that the Edgar Thomson Steel Company intend increasing their blast furnace plant by the erection of two 20 foot stacks.

stacks.

The Elba Iron and Bolt Works are running full of orders and have as much on hand as they can attend to. The prospects are good, and although they do not anticipate a marked advance in prices, still they believe that there will be a general stiffening up. Just now the demand for nuts and bolts, which enter largely into railway equipment, is very strong.

VIRGINIA.

Col. Robert Sayers, of Wytheville, will begin the erection of an iron furnace in Rye Valley at an early date.

WEST VIRGINIA.

The Beale Rolling Mill, at Parkersburg, which has been idle for some time, has been put in operation again.

The Riverside Iron Works are on in all the departments, except the forge at the upper mill, which is running only half time. Coal is being brought from other localities in large quantities, and this mill will continue to run on purchased coal until other arrangements are made.

OHIO.

The Cincinnati Tool Company, manufacturers of hardware specialties at Nos. 216, 218 and 220 West Second street, Cincinnati, 118 and 220 West Second street, Cincinnati, issued their first catalogue and price list on the 1st of January, 1880. It is a neat little work, containing about 40 pages, in black and gold covers, with handsome illustrations of leading specialties on front and back. The company have three large floors, amply supplied with machinery. Among the specialties of this establishment we may mention an entirely new tool, known as an adjustable an entirely new tool, known as an adjustable wrench, possessing great utility and conwrener, possessing great utility and convenience in adjustment; a bench stop of new design, combining novelty and simplicity with great utility; a spoke pointer, possessing much merit in the peculiar construction of its knives, so as in its motion to make a The board of directors of the Thomas Iron Company met on Thursday, at their office in Easton, and decided to declare a dividend of 4 per cent. from the earnings of the last six months.

The Isabella Furnace, which stood idle for a number of years past, but which was recently put in operation, is now in full blast.

The Joseph Mayden Brass Company's build-

The Joel Hayden Brass Company's build ings at Lorain are nearing completion Workmen are busily engaged putting on the roof. It is expected that about 300 work-men will be set to work by the 1st of April next, which will necessarily increase the population of Lorain very much, as a ma-jority of the workmen will have to be imported. With the brass works, Jay Gould's proposed new road along the lake sho good prospect of a new road from the coal fields, the town will get such a "boom" as it has never known before.—Cleveland Herald.

The blast was put on at the Alice stack last Thursday night, after a silence of a couple of months. Saturday the first iron was made. The furnace is running well,

making about 40 tons of mill just now,
Sarah Furnace will bank up to-day for a
couple of weeks' repairing. She has been running steadily for 20 months.

The iron work of the new Court House

Columbus, has been awarded to H. B Clough & Co., Middletown; at \$30,000.

The Brown & Bonnel Co., Youngstown, are about negotiating for a site to erect two blast furnaces.—Labor Tribune.

All hands are busy upon the repairs and changes being made at the Belfont Furnace,

Ironton, preparatory to putting it in blast.

The Universal Machine Works, Cincinnati, are building a band saw for foot power. their bar and guide mills, while their plate mills are idle. They are moderately full of erders, and anticipate an active demand in ever known, and will soon be ready for the

> The boiler house of the Valley Rolling Mill, of Youngstown, was entirely destroyed by fire on the 15th inst. Loss, about \$6000; insurance, \$3000. The mill will resume in one week.

# H. D. SMITH & CO.,

Plantsville, Conn.,

Manufacturers of the

# BEST QUALITY CARRIAGE MAKERS' HARDWARE.

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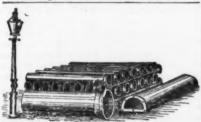


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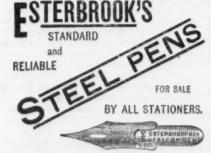
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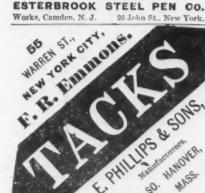
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This practical and indispensable article—especially for wear where exposed to ice, snow, or slush—was first introduced by this company several years ago, and its real value is in being almost indestructible, when the proper materials are used in its manufacture, whilst the cheap, and crumbles to pieces. Address Iron Stairways, &c.



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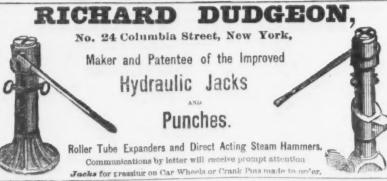


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Beardsley Scythe Co., Manufacturers of GRASS, GRAIN & BUSH SCYTHES, Hay Knives & Corn Knives.

West Winsted, Conn.

See our advertisement in The Iron Age first taste of each month.

chinery, which has much increased their ca-

The Illinois Iron and Bolt Co., of Carpenterville, are again running on full time. The "shut down," as reported, was only for one day. Ice has been cut away at the mouth of the race and water is again plenty.

Frederick Schroeder is negotiating with Elgin parties for the opening of an extensive plow factory in that city. He is the patentee of a new combination plow that serves the treble purpose of an ordinary plow, a marker and a planter. It can be used advantageously, it is claimed, for planting both corn and rotators. ing both corn and potatoes. Mr. Schroeder is desirous of opening his factory late in the pring. He says he will employ from 75 to

Too hands.—Chicago Industrial World.
The Lyman Manufacturing Co., of Grand Crossing, begin work on Thursday morning, compromise in the barb-wire difficulty having been effected.

The Hercules Iron Works are still hard pushed to turn out the large contracts on hand.

It seems now to be pretty well settled that locomotive works will be established at Pullman, as we reported in these columns some time ago. A wealthy corporation formed at Providence, R. I., for the manufacture of locomotives, has purchased thirty acres of land between Irondale and Pullman. The hydrogen the Fatt has impressed. man. The business in the East has increased so that the shops are all behind their orders. This will be the only establishment of the kind in the West. The situation of Pullman and the other large manufactories have attracted attention to this part of the country. The company is composed entirely of eastern capitalists. - Chicago Industrial World.

MICHIGAN.

The Union Iron and Steel Company, of

placing it in position. The St. Louis Iron and Machine Works are engaged in replacing the machinery recently broken at the Laclede Rolling Mills.

One of the cog-wheels, successfully cast a few days ago, weighs 15 tons.

The Fulton Iron Works are engaged in manufacturing a lot of machinery for the

St. Louis elevator. KENTUCKY.

The Louisville Steam Forge Company, on the erection of their new buildings in that city, will make a specialty of railroad car wheels, but will manufacture all kinds of

large forgings.

Ashland Furnace continues doing well,
making 50 tons per day on all raw Coalton coal for fuel.

The bed plate of the big engine at the Norton Iron Works broke last week, causing a stoppage of the whole works until probably the end of next week.

Hunnewell Furnace produced during the year just closed 5431 tons of mostly foundry pig metal, running 320 days in all, Sapan, connecting there with the cable which is equal to a daily average of 17 tons, and using per ton of iron made, 134 bushels another under the South Pacific by way of and using per ton of iron made, 134 bushels of charcoal, 2 96-100 tons of iron ore, and one-fifth of a ton of limestone. Her stock necessitist during the year foot up as follows:

New Caledonia, and thence to Brisbane in receipts during the year foot up as follows: 17,084 tons of iron ore, 1036 tons of limestone, 36031/3 loads of charcoal, 22,800 cords of wood.

GEORGIA.

The cold-blast charcoal furnace at Ridge Valley, Floyd County, near Rome, has lately gone into blast, the first iron being shipped on the 8th instant—from 12 to 15 tons per day is the capacity. The stack is 43 x 10, and was built in 1873-4.

The Rising Fawn Furnace was blown in some days ago, and is now in full operation.

The Oakdale Iron Company are running their furnaces in Roane County steadily, making 50 tons of iron a day. The fuel used one-half coke and one-half raw coal, mined on the property.

TENNESSEE.

On Wednesday last the Vulcan Iron and Nail Works, of this city, were transferred to a company represented by Gen. Powell, of Belleville, Ill., who have commenced making such repairs as will enable them to long the nail mill at an early day, problem of the second cable communications with the

cage, when loaded, is practically in equilibrium. The current generator at the base is electrically connected to the dynamomachine in the cage, and the latter actuates two toothed wheels, taking into a metal rack running up the center of the passageway of the lift.

#### The Outlook for International Telegraph Communication.

The consolidation under one organization of the Western Union, the Atlantic and Pacific and the American Union Telegraph companies, while it must necessarily lead to an improvement in the general telegraph service of the country, together with a re-duction in the cost of telegraphy through the concentration under one system of the the concentration under one system of the forces now employed in keeping up three systems, is but preliminary, as it appears, to the rapid and systematic development, under the general management of General Eckert, of a grand telegraphic network ex-tending around the world, and having its center not at London, but at New York.

For some time past Mr. Cyrus W. Field has been agitating the project of establishing such a telegraphic network. But while Mr. Field has been talking about it the Eng-lish "leviathan of cables," Mr. Pender, has been adding wire to wire and rope to rope to form his world-girdle of "international telegraphy," the basis of which was to be the complete subordination of the whole cable service of the world to the cable concause service of the world to the cause consolidation effected by Mr. Pender in London. On the 14th of December last the London correspondent of the World announced that the first practical step toward breaking the continuity of Mr. Pender's At the Baugh Steam Forge in Detroit, the bar mill is en double with both furnaces, the guide mill single, and all other departments full, making iron for the Michigan Car Company solely.

Breaking the continuity of Mr. Fender's grand cosmopolitan coil had been taken by the American Union Telegraph Company, in behalf of which Mr. Jay Gould had ordered from the well-known cable constructors, Messrs. Siemens & Company, The Union Iron and Steel Company, of Chicago, has purchased a lease on the Negaunee hematite range, adjoining the Baraga, and are also negotiating for other property in the district.

The furnace at Menominee has been rechristened, in honor of the town in which it is located. It will be known hereafter, as originally, as the Menominee Furnace. Pioneer stack No. 2 was blown out last Saturday, after a continuous run of nearly 15. Saturday, after a continuous run of nearly 18 plain, but polite, intimation to Mr. Pender months on one hearth, during which time that the United States had declared its indeshe made 14,672 tons of pig metal. She will be blown in again as soon as supplied step has now been taken in the consolidation with a new hearth. with a new hearth.

The Spurr mine is advertised to be sold at chancery sale, at L'Ause, March 2. In the few years that the Spurr was wrought, under der anything but efficient management, it yielded very nearly 150,000 tons of ore. We believe it to be a property worthy the vielded very nearly 150,000 tons of ore. We believe it to be a property worthy the attention of capitalists.—Marquette Mining Journal.

MISSOURI.

The rebuilding of the Broadway Foundry, St. Louis, has not yet been commenced, the insurance not having been adjusted.

The Atlantic Milling Co., of St. Louis, have had a new Harris-Corlis engine built for them at Providence, R. I., and are now placing it in position. telegraph, partly within and partly without the limits of the Stats of New York." The capital stock of the company will be \$20,ooo,ooo, with power to increase the same to such amount as may be necessary to build and construct the lines of telegraph and ca-ble contemplated by the company, and the term of the association is fixed for 50 years from the association is fixed for 50 years from the 18th of January, 1881, to the 16th of January, 1930, and its headquarters are to be in the city of New York. Under the consolidation of the three tele-

graph companies, the American Telegraph and Cable Company, co-operating with the new organization, will at once proceed not only to increase the existing cable facilities between this country and Europe and to extend southward the cables which now con-nect this country with Cuba and the West Indies, so as to secure for the great coffeo trade of the United States a direct tele-graphic communication with Brazil, but also to lay cables under the Pacific from San Francisco to Honolulu. From Honolulu one cable will be laid under the North Pacific to Australia, where it will connect with the Australian and New Zealand cable system in one direction, and with the Australian and Straits system in the other direction. It is The old Schofield rolling mill at Atlanta has been merged into the Georgia Iron

Works.

GEORGIA.

not the intention of the company to adopt the idea favored by Mr. Field and Mr. Evarts, of asking for a government guarantee on these Pacific lines, as it is well ascertained that if these cables are constructed on sound principles and managed with judgment and economy, they cannot fail to be remunerative. Should the government desire it, however, a connection may be made from Vancouver's Island, by way of Alaska, with Petropaulowski and thence with the North of Japan, and for such a connection it would seem to be proper and fair that the governments of Russia and Japan, as well as of the United States should assume well as of the United States, should assume a reazonable pecuniary responsibility, since, excepting in connection with the whaling interest, which now suffers greatly from the

or some years to come.

Or some years to come.

Or some years to come.

Under the new arrangements, our telegard cande and with central America and with Central America and with South America, can and will be what extent the works will be operated, but it is thought no iron will be made for the present. When the entire works are put in operation, between 500 and 600 hands will be employed — Chattanooya Tradesman.

Dr. Siemens, who appears to be indefatigable in seeking to extend the sphere of usefulness of electricity, has brought out an electric elevator, which he has been exhibiting at Mannheim, Germany. Its construction appears to be simple, and suggests an easy method of putting in safety brakes. The cage is carried by wire ropes, having counter-weights, so that the

# The Iron Age

Metallurgical Review.

New York, Thursday, January 27, 1881.

DAVID WILLIAMS . . Publisher and Proprietor JAMES C. BAYLES . . . Editor. JUHN S. KING . . . Business Manager

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to be doing a good work in averting unnecessary and costly litigation, brought by inventors to enforce their real or supposed 1879, Canada has drawn a supply of steel claims against railroads for the infringement of patents. Care is taken by purchasing agents to avoid infringing patents which the railroads are not prepared to recognize, by purchasing, in case of doubt, only from £452,032. manufacturers who can give assurance of the right to use the patents in question, or the satisfaction of all parties than would land to this country:

have been possible had the dispute been carried to the courts. Where agreements could not be reached without recourse to the courts, test cases have been made, which, without burdensome expense to either party, have settled all the questions at issue between them. There are many advantages in such co operation for mutual protection, and the only danger is that it may ultimately lead to a disinclination to recognize the rights of any inventors who cannot enforce their claims against a strong alliance.

for 1880.

The Board of Trade returns for the year 1880 are of more than ordinary interest, as they clearly show the improvement in the trade of Great Britian during that period, compared with the year immediately preceding it. The imports were £409,990,056, against £362,127,741 in 1879, an improvement of nearly 14 per cent., while the exports exhibit an even more striking advance by going up from £191,531,758 to £222,810,-526. In general, therefore, the volume of business was much more satisfactory in 1880 than during the gloomy period of 1879. In the hardware, metal and tin trades this has proved especially so. English manufacturers of hardware have increased their sales to every country but Australia, in the case of which the falling off is not serious having decreased from £449,726 to £411,035. The aggregate exports of hardware during the years 1880 and 1879, respectively, were £3,512,011 and £3,028,271, of which £494,-207 in 1880, and £335,330 in 1879 were sent to this country, £150,004 and £110,780 to British America, and £465,002 and £409, 086, respectively, to the West Indies, Brazil and the Argentine Republic.

The exports of steam engines show remarkable increase, having risen to £249, 294 in 1880 from £187,033 in 1879, while other descriptions of machinery and mill work have jumped from £330,574 in 1879 to £725,949 in 1880. The United States has contributed a share in this improvement, though the aggregate is not considerable, being £82,983 for both classes together in

In the leading articles of the iron trade the progress made during the year 1880, as compared with the year preceding it, is as tonishing, and it is a fact worthy of special attention that the sales to almost every ountry have very considerably increased. The business with this country, of course, exhibits the greatest fluctuation, and the increase of exports to the United States contributes the largest share to the growth of the trade; but is does not alone account for it, as many other countries again came for ward as heavier purchasers, so that England regained all the ground lost during the duli period of 1879, and in many cases did a better business than in the years immediately preceding it. We are not at present in posession of the amounts of the shipments of pig iron and rails, with the exception of those to this country, of which we have both quantities and values. The tables before us, however, show many facts of importance In the aggregate, the sales of English pig iron to foreign countries foot up to £5,207, 294 in 1880, against £3,150,389 in 1879, of which this country has taken £2,278,916 Wires. Our Trade with Greece. An English and £873,320, respectively. Notwithstanding the light duty imposed upon foreign pig in Germany, that country has continued to be a heavy purchaser, the shipments direct and via Holland aggregating £1,236,697 in 1880, against £1,064,498 in 1879 and £1,266,-242 in 1878. Russia took £503,317 worth of pig in 1880 and £412,830 in 1879; Balgium, £343,417 in 1880 and £194,230 in 1879; and France, £251,981 and £184,690, respectively.

Iron rails have enjoyed a temporary spurt of prosperity, due chiefly, however, to increased orders from this side of the Atlantic, the total value of the shipments having been £908,891 in 1880, against only £293,658 in 1879. Of this increase of £615,233, as much as £516,527 is due to this country. In steel rails a healthier and more substantial improvement is recorded, the total shipments footing up to £3,306,367 in 1380, against £1,950,806 in 1379. Sweden, Norway, Germany, Spain, Italy and Brazil, have fallen off, though not in a serious manner. A more remarkable state of affairs is revealed by the returns in regard to Russia. In 1878 that country took £409,785 worth of stee! rails; in 1879 only £222,950, and in 1880 only £61,532. Taken in connection with the fact that during the same time the exports of pig to that country have materially increased, it clearly shows that Russia is taking the first step toward making her own industry independent, by build-The Western Railroad Association seems ing up the manufacture of the finished article. Besides our own country, which took £884.133 in 1880, against £137,600 in

These figures amply show that the Engwho will agree to assume liability for the of the volume of business during the by the fact that the Western Union alone consequences of infringment. When claims | year just elapsed, and that they enjoyed a | has between 450 and 500 wires within the are made by the owners of patents said to be infringed, the claims are investigated, less liable to shrink rapidly than that from change, however, is considered inevitable. and in many cases settlements have been this country. We give below in detail the Telegraphy has become so important that reached much more quickly, cheaply and to extorts of iron, steel and metals from Eng- wires are multiplied in all our large cities

EXPORTS OF IRON AND STEEL FROM GREAT BRITAIN

20,955 20,955 23,681 188,705 20,648 Bar, angle and rod. Hoops, sheets and plates. Cast or wrought. It may be of interest in this connection to

compare our total imports with the shipments from England, in order to show approximately what share that country has The English Board of Trade Returns taken in the movement. Our import statistics have not been published for more than the first eleven months of 1880, but by adding the month of December, 1879, to them we obtain figures which are probably more stantinople, which he took by storm on May fairly comparable than if the year 1880 29, 1453. The final conquest of Greece did were taken, because the two periods of shipments from Europe and receipts here coincide closely, a fact of great importance in this case, because the amounts fluctuate so considerably from month to month.

> IMPORTS OF IRON AND STEEL INTO THE UNITED STATES DURING THE 12 MONTHS PROM NOVEMBER 30, 1879, TO NOVEMBER 30, 1880.

A comparison between these figures and those given above, shows that England has of Russia, Francy and England at Navarino furnished us with the bulk of our foreign supply of pig iron and iron and steel rails, but with less than one-half of bar iron, and even a smaller proportion of the enormous quantity of scrap and old iron.

#### Underground Telegraph Wires. The wholesale destruction of telegraph

rires by the recent storm, has directed attention more seriously to the expediency of substituting an underground system for wires. The managers of the Western Union say that the subject has been under consideration for a long time; many methods have been proposed and patents examined; experiments have been making constantly, and various data gathered concerning attempts to run underground wires by other compa nies, without arriving at any definite conclu sion. For some time past they have had sixty wires in a cable connecting the Western Union Building with Pier No. 18, N. R. and thence across the river, and also eighty wires to Wall street, which have worked well. The wires are inclosed in an iron pipe 23/2 inches in the clear, and can be repaired at any time without difficulty. By means of a tag attached to each wire, bearing a num ber, any one of the wires can be instantly identified should an accident occur. "Flush boxes" along the street afford openings for the workmen to make any needed change Said one of the superintending bosses: "We always know what we get hold of." The superintendent remarked that they did not expect to avoid difficulties, whatever the plan that might be adopted. With underground wires there is the difficulty of induction, also in finding an imperishable material, added to which is the question of cost. Gutta-percha, he thought is the best coating for wire yet discovered, but is expensive. What is known as Brooks' cable has received careful examination as to its practical working. This cable is made of copper wire, covered with cotton or jute, and is drawn through iron pipes filled with liquid paraffine. The latter substance is not only intended to preserve, but to insulate. In its manufacture every effort is made to exclude moisture. The aber is first boiled in oil, to expel any moisture it may contain, and in every process is carefully kept from the air, until it is finally sealed in the iron pipes. A section of this ort of cable is in use across the St. Louis Suspension Bridge, and the telephone companies have laid down several sections, which are being carefully watched to observe its workings. If it is good for telephones, the inference is that it will answer for telegraph lines. In London they are using gutta-percha very generally for underground purposes, while in Germany they lay down ordinary cables.

The Executive Committee of the Western Union have not come to any determination They consider it useless to attempt anything in that line if they are not allowed to us the streets, taking up the pavement co fa as necessary in laying their lines. Their ex perience in Jersey City has been peculiarly unfortunate in this respect, for they hav had an underground line in complete orde between Newark and the outskirts of Jersey City ever since last June, but are prohibite by the authorities from going any further That underground lines are practicable i not doubted. A gentleman of many years experience as a contractor, and still holding one of the most responsible positions, affirm with confidence that 1000 wires can be laid in a space not more than 18 inches square rails from England to the extent of £572,164 that these wires can be changed at will in 1880, against £343,650 in 1879, while British India has risen from £253,790 to made without taking up the street. The £520,152, and Australia from £238,152 to patent is still in private hands, awaiting events which may call for its adoption.

The magnitude of the interests involved lish ironmasters have no reason to complain in the question here discussed, is indicated to such an extent that they form a network

between street and aky, the poles encum- Greek flag 5440 vessels, with an aggregate bering the streets and destroying anything tonnage of 262,032 tons, manued by 26,760 like architectural effect. But until public sailors. The fleet comprised 4303 vessels opinion finds expression in an imperative under 60 tons, measuring together 4371 tons. demand, we doubt if the companies will and 27 steamers, measuring together 8241 do more than talk about burying their tons. wires.

#### Our Trade with Greece.

Greece, once the cradle of civilization, has been groaning under the yoke of the Turks for about three hundred and fifty years. When Mohammed II, in 1451, ascended the Ottoman throne, the fate of the Greek Empire seemed to be sealed. At the head of an army of 300,000 men, supported by a fleet of 300 sail, he laid siege to Constantinople, which he took by storm on May not, however, take place until 1481. While, therefore, the Moslem rule ended in Western Europe by the simultaneous conquest of Grenada by the Spaniards, it obtained, strange to say, a firmer footbold in Eastern Europe than ever, and, to the everlasting shame of Christendom, the Turks are masters of Constantinople to the present day. The Greeks had to fight a heroic struggle during seven years-from 1821 to 1828-in order to shake off this demoralizing yoke. The Turkish naval power was at length completely destroyed by the combined fleets on October 20, 1828, and Turkey was compelled to recognize Greek independence. Unfortunately, the jealousy between these powers has ever since prevented the constitution of Greece on a living basis. They left the kingdom crippled and allowed the Turks to retain important Greek provinces. Now that the Turkish Empire is in a state of dissolution, modern Greece is in hopes of eventually obtaining these provinces; but, judging from the obstinacy with which Turkey eludes the rectification of the Greek frontier, decreed in principle at Berlin in June, 1878, the aggrandizement of Greece will be delayed tili the next great Eastern

war. But small and ill-constituted as Greece is, she has nevertheless advanced rapidly of late years. In 1870 the population of Greece amounted to 1,457,894. Last year's census shows it to have swelled to 1,679,775; in 1838 the population did not exceed 850,000. Athens counted 48,000 inhabitants in 1870 it now has 74,000. The Piræus, the port of Athens, has doubled in population since 1870, now counting 22,000.

The soil of Greece is stony and scantily wooded. It is mountainous and produces comparatively little, except in the Ionian Islands, ceded by Great Britain, where the famous currants are grown. If Greece possessed the fine provinces still held by the abundantly, and become, besides, one of the manufacturing nations of Eastern Europe. trade and navigation, and has become one of the principal carriers in the Mediterranean. Her merchants have established branch houses at Constantinople, Alexandria, Malta, Marseilles, Naples, London, Liverpool, New York, Calcutta and Rio, and the Greeks have become powerful in commerce. A nation which has been able to accomplish so much in half a century with such scanty means as they possessed, assuredly must be gifted with mental qualities of the first order, and they are conscious of these qualities; hence their patriotism and their ambition to become one of the great elements of Eastern civilization after the Turks shall have disappeared from the Not being a manufacturing nation, scene. they look to Central and Western Europe for manufactures, and are consuming large amounts of them, as we shall show.

Greece covers an area of 19,324 square and under the new arm of July 18, 1877, can place on a war footing 200,000 men. She conquered her independence with 50,000 soldiers. The Greek fleet is small, comparatively speaking, consisting of I ironclad frigate, I monitor, 8 screw steamers and 11 sailing vessels, manned by 71 officers and 581 men-

GREECE'S GENERAL TRADE—1875—IN THOUSANDS OF DOLLARS.

| n   |                             | Import.  | Expor       |
|-----|-----------------------------|--|-------------|
| 1.  | Great Britain               | 6.258  | 8.11        |
| a.  | Turkey                      | 4.602  | 8.58        |
| g   | Austria                     |  | 1.97        |
| 10  | Russia                      |  | 92          |
| 10  | France                      | 3-754  | 40          |
| r   | Italy                       |  | 66          |
| -   | Other countries             | 673  | 1.30        |
|     |                             | distinction in the last of the | -           |
| y   | Total                       |  | 15.15       |
| e   | Trade of 1874               | 19 7:9   | 13.02       |
| r   | The chief articles imported | in 1375  | were        |
|     | Breadstuffs                 | 8  | E. 770.00   |
| y   | Dry goods, hardware, &c     |  | 4,706,20    |
| d   | Hides                       |  | 1,052,00    |
|     | Sugar                       |  | 1, Icd, 20  |
| Γ.  | Lumber                      |  | 1.050.40    |
| 8   | Cattle                      |  | 501,80      |
|     | Provisions                  |  | 580,26      |
| 3   | Coal                        |  | 531,80      |
| g   | Coffee                      |  | 463,23      |
| S   | and those exported:         |  |             |
| d   | Currents                    |  | a at6       |
| u   | Olive oli                   |  | a, 586, 600 |
| ;   | Hides                       |  | 1,054,80    |
| ١,  | Lead                        | ******   | 842,80      |
|     | Figs                        |  | 801.800     |
| 0   | Gall nuts                   |  | 349,800     |
| e   | Liquors and wine            |  | 239,400     |
| - 1 | Touacco                     |  |             |
| 8   | Cotton twist                |  | 839,600     |
|     | Silk                        |  | 192,800     |
| ,   | Soap                        |  | 171,230     |
| i   |                             |  |             |
| 1   | MARITIME MOVEMENT—ENTERED   | AND SAI  | LED.        |
|     |                             |  |             |

|                       | 1874.  |                        | 1875.             |           |
|-----------------------|--------|------------------------|-------------------|-----------|
|                       | Ves.   | Ton.                   | Vo.               | Ton.      |
| Seagoing<br>Coastwise | 21,494 | 3,550,025<br>4,495,406 | 41,537<br>139,618 | 3.671,329 |
| Total                 | 142,50 | 8,045.431              | 151,149           | 8,095,439 |
|                       |        |                        |                   | -         |

In point of railroads, Greece is the most poorly endowed country in Europe. There is only the line from Athens to the Piræus, about eight miles in length. She makes up for it in telegraphs, having in operation in 1875, 1616 miles of lines, with a length of wire of 2000 miles, and 60 offices, dispatching in that year 249,673 telegrams. There are 140 post offices with 481 omployees, dispatching in 1876 some 3,c66,630 letters and 1,995,939 newspapers. The post office collected \$117,044 in postage, and spent for its administration \$83,502. The public debt of Greece amounts to \$96,616,581.

The general trade movement shows that Greece imports largely in excess of her exports, which is explained by what we have said. Being chiefly a carrier and trader between foreign nations, Greece receives a great deal of freight, and profits on dealings, in the shape of money and merchandise, while producing comparatively little herself.

The trade between the United States and Greece was moderate in extent until the year 1878. It was, in thousands of dollars: Fiscal year... 1871. 1872. 1873. 1874. 1875. 1876. Import from 

The principal import article from Greece is currants, of which we received \$523,128 worth in the fiscal year ended June 30, 1877. The chief article exported to Greece up to 1878 was petroleum, of which \$190,170 was shipped during the fiscal year ended June 30, 1877, and \$143,235 the previous year. When the war between Russia and Turkey broke out, Greece felt called upon to arm, and drew from the United States a considerable amount of war material in the shape of ordnance stores, &c., among which were:

Total ..... This represents the shipments of domestic goods from this country to Greece during the fiscal year ended June 30, 1878.

Our export of war material to Greece is certainly better that no export at all, although it be but a temporary affair, and as our trade with Mediterranean countries gradually expands, the Greeks will soon discover that they can get hardware and a good many other articles, such as woodenware, as cheap as from Western Europe. An extension of steamship lines beyond Turks, she would be able to produce food Sicily to Greece, Constantinople and Alexandria would materially assist in fostering trade with the Ionian Islands and Athens, As she is situated, she has been limited to and the time may not be distant when our large importations of Greek currants may cause the owners of these steamship lines to add the more Eastern ports in the Mediterranean to their regular service. At all events, there is a promising field in that vicinity, to which we invite the attention of our merchants and manufacturers.

#### An English National Free Trade Union.

The English Chambers of Commerce have een for two years at work to accomplish that for free trade which this country has had from the first-absolute, unrestricted free trade between every part of its dominions. From the beginning of our government one of our "broad principles" has been this freedom of trade between all parts of the United States, a principle that has been jealously guarded, and one that, when an attempt has been made on the part of certain States and communities to abridge this right, has been put aside by our Supreme Court, as in the celebrated Maryland case early in our history. England, however, in her desire to secure free trade or its near approach with this country, has entirely neglected this phase of trade, and has allowed certain restrictions to grow up in the colonies that prevent this free trade in her own dominions, and now her commercial bodies are moving in the matter. A recent number of the Ironmonger states that "in the last week of February an important conference of the representatives of the "Chambers of Commerce in different parts "of the empire will be held in London, on "the subject of free trade and the best " means of creating uniformity in the customs duties throughout the Queen's dominions. The arrangements for the conference have been nearly two years in course of preparation, and it is anticipated that all parts of the empire will be represented by delegates. The different Chambers in England will send 48, Canada 10, "India 9, and the other colonies from 2 to 4 each. The broad proposal to be submitted 'to discussion is that by uniform, or at least reciprocal, fiscal regulations all parts of the British Empire should be induced 'to trade with each other, rather than with

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This is another concession to the American idea that free trade and protection are national, not international questions, and are to be decided as national questions

'foreign countries."

It may be interesting, as bearing on the question of the ore supply of this country In 1876 there were navigating under the for 1881, to note that next June the govern-

mental concession of the iron mines of Elba to Bastogi & Co. will terminate, and the question is now being discussed between the Italian Minister of Marine and the Minister of Agriculture and Commerce whether to each side. He was the son of the first renew the lease, or whether the government will take the mines into their own hands. Some time ago they entertained the idea of establishing a large foundry at Elba, in order to work the iron ore on the spot. The ministry of Italy, in view of the constant deficit in revenues and to encourage home. will take the mines into their own hands. deficit in revenues and to encourage home industry, are seriously discussing the question of directly operating the mines and making constructive material.

An organization of the mining engineers of Ohio has just been formed at Columbus. somewhat on the plan of the one in the anthracite regions of Pennsylvania. The membership will be restricted to those interested in the ownership and management of mines, and civil and mining engineers in practice. The institute proposes to meet twice in each year, and read and discuss papers on subjects affecting the working and ventilation of mines, the mineral resources of the State, the preservation of mining plans and kindred subjects. The following officers were elected for the ensuing year: President, Andrew Roy, Columbus; vice-president, Fred. Howell, Zanesville; secretary and treasurer, R. S. Paul, Akron.

#### The Egyptian Obelisk.

In accordance with his promise, Commander Gorringe swung the obelisk into position on its base at noon on Saturday last. At precisely two minutes before 12 o'clock, nau-tical time, a carriage containing Mr. Evarts, Secretary of State; Gen. Goffe, Secretary of the Navy and others, drove up through the crowd of vehicles. Lieutenant Commander Gorringe greeted its occupants, and rapidly ascending with them the Greywacke Knoll announced his readiness to proceed at once with the work of throwing the monoonce with the work of throwing the mono-lith into position. Secretary Evarts, after a few moments' conference with his com-panions, turned and requested Lieutenant-Commander Gorringe to give the signal to his men for turning the vast shaft in air. At that moment the great monolith lay, delicately poised on its trunnions, at a hight of about 40 feet from the ground, and covered with snow and ice. The prepara-tions for turning the stone were amazing in their simplicity. At the small end of the obelisk was a short 1½-inch wire rope, which was connected to a chain anchored to the westward about 60 feet distant, by means of a three-fold purchase, having the hauling part rove through a snatch-block, made fast alongside of the anchor and leading to a capstan on the southwest side of the foundation. At the base there was also a three-fold purchase with one block, made fast to the clamp near the base, and the other attached to a toggle on the west of the foundation wall. The hauling part was made fast to a pin driven into the ground along-side the capstan. At the word of command the men began to haul gently on the down haul, and the men at the capstan gradually released the top. When the obelisk reached an angle of 45 degrees, Lieutenant-Com-mander Gorringe waved his hand and ordered the men to hold it in position until a photograph of it had been taken. This was done almost instantaneously. "Lower was done almost instantaneously. "Lower away!" shouted Lieutenant Commande Gorringe, and as easily and delicately as if it were the minute-hand of a lady's watch, the colossal stone moved again and steadily swung into an upright position. Two hundred and nineteen and a quarter tons of stone, distributed in a length of 69 feet 2 stone, distributed in a length of 69 feet 2 inches, are not turned into mid air every day. As the heel of the great stone, pulled upon through reeves and blocks by half a dozen sturdy workmen, began to descend. the spectators, who crowded one another in the spectators, who crowded one another in the winter snow and stood many rows deep behind the marines and sailor boys, set up cheer after cheer. If the camera has not done an injustice, the photographs taken the resulting the resulting the sailor boys. when the monolith was half swung down should be in large demand, for the scene was brilliantly picturesque. Outlined against the snow at the north was a splendid line of troops from the U.S. Marine Battery at the Navy Yard, under command of Captain Henry J. Bishon, their light blue, bright Henry J. Bishop, their light-blue, bright uniforms making a fine contrast with the black mass of people who crowded the knoll behind them. On the left of the line was the Marine Band, its brass shining in the sun-Marine Band, its brass sining in the sul-light and its scarlet hat bands glowing. Along the inner edge of the broad drive which fronts the Metropolitan Museum, and under a floating national flag, was drawn up a line of sailor boys in navy-blue and white leggings. These men were from the Minnesota under Lieut.-Commander W. H Whiting.

Lieutenant-Commander Gorringe's order to "Lower away" was quickly followed by another, "See that the bolts are clear," and "Haul in the heel tackle." Immediately the great needle began to move. Its finely another cut apex went up and its unevenly rounded heel descended. "Don't slack too much easy now!" called out the Commander. easy now!" called out the Commander. Captain Bishop shouted his order to the band, "Prepare to play 'Hail Columbia,' and play it with a will!" The Rev. Dr. Prime, standing near, called for "Three cheers for Commander Gorringe!" They were given with a will. Slowly the butt descended. Commander Gorringe, with his hat off, extended his left hand, and looked past the paira to note the moment when the tone should fall into the perpendicular. When the moment arrived he said, "Belay all!" and the obelisk rested. Tren he descended from the timber on which he had

been standing. The entire operation of swinging, includ-ing the delay for the photograph, consumed five minutes. Commander Gorringe remained on the gound till 8.15 p. m., when the obelisk was finally and exactly lodged on its pedestal. Nothing now remains to be done to the obelish but to put the crabs under the shaft, remove the machinery and tear down the masonry built to sustain the tower and

Pharaoh of that name, brother of the second. seclusion in a temple in the Delta marshes, grudgingly share with him his stolen prerogatives. He repaid her by appropriating most of her monuments, so that it cannot easily be said which should be attributed to her. He occupied a subordinate position when she sent forth her great fleet down the Red Sea to coast Cape Guardafiu and make the adjacent country of Pount and Egyptian dependency. But not long after this the young prince emancipated bimself from petticoat government, and in 15 brilliant campaigns, between his 22d and 42d year, capturing Kadesh, winning battles on the Euphrates and even on the Tig is, and routing the Syrian kings and the confederates in the famous fight at Megiddo. "Egypt," so ran the phrase, "set her frontiers where she pleased herself." "In Africa his conquests spread beyond Etkiopia to Khartoum in the south and Algeria in the north; the waters of the Black Sea were controlled by the sails of his fleet, and the controlled by the sails of his neet, and the rivers of Northern Europe rippled by the oars of his galleys." By him was our obelisk erected before the Temple of Amen, at Heliopolis, where, doubtless, it was seen with awe by Moses in his youth studying there the "wisdom of Egypt." According to awe by Moses in his youth studying there the "wisdom of Egypt." According to Pliny, whose statements must be taken with considerable reservation, Thothmes, or, as he writes the name, Mesphres, was "warned" to erect this monolith in a dream; "indeed, there is an inscription upon the obelisk to this effect, for the sculptures and figures which we see en-graved thereon are no other than Ecyptian. graved thereon are no other than Egyptian letters." Certainly the monarch may have been led by a dream to design the erection of the obelisk, but there is no record of the circumstance in the hieroglyphic inscriptions. The obelisk is 69 feet 2 inches high by 7 feet and 8 inches wide at the base. It is of red granite. It stood upon a limestene pedestal, resting upon three steps, and when first set up had only a central varieties column of inscriptions hencrific of graved thereon are no other than Egyptian vertical column of inscriptions bonorific of the sovereign erecting it. Rameses II., the bloved of Amen," and the great builder of temples and palaces, appropriated the obelisk and added two outside lines in his

own praise upon each face.

The monolith was destined to be associated with the name of another sovereign, and a greater than Rameses or Thothmes. In the eighth year of his reign Augustus Cæsar, desirous of commemorating his victory over the last of the Ptolemies, removed it from Heliopolis to Alexandria, and re-erected it in front of the temple called the Cæsareum, which he had himself founded, and which was for centuries one of the glories of Alex-andria. This removal took place during the prefecture of Pontius Rubrius Barbarus, who was the fourth prefect of Egypt under Augustus Cæsar. On attempting to re-erect the obelisk it was found that the lower por-tions had been so much corroded and suf-fered so much dilapidation that the Roman engineers, instead of imposing it flush upon its base, preferred to support the monolith upon four bronze crabs or feet. This plan, which was afterward generally followed in Rome, caused the ultimate overthrow of all the obelisks set up by the Cæsars; first, on account of the inequality of the tension: and, secondly, because the bronze was a metal too valuable to be suffered to remain when the period of ruin set in. Mr. John Dixon, in clearing the soil from the fallen obelisk which lay beside this one, preparatory to its removal to London, excavated out also the base of the New York obelisk. and discovered one of the bronze crabs which supported it still in situ, the others having long since been wrenched away. Upon this crab or claw were found on either side two inscriptions—one in Greek, the other in Latin—fixing precisely the date of the erection of the monument. The inscrip-

> In the eighth year Of Augustus Cassar,
> Barbarus, prefect
> Of Egypt, caused this obelisk to be
> placed here,
> Pontius being architect.

the Egyptian Empire, three of whose greatest monarchs were associated with it, was now, by remorseless fate, transported and transformed to declare the subjection of the province of Egypt. It is obvious that as the famous Queen Cleopatra died in the second year of Augustus, while this obclisk was removed to Alexandria in his eighth, or B. C. 23, she could have had nothing to do with it. The connection of her name with it is an anachronism. Not the less is it a conse-

The inscriptions of Thothmes and of Rameses on our obelisk have been thus carefully translated by the accomplished Egyptol-

ogist, Brugsch Bey:

No. 1.—Central Column of Thothmes III.

Hongs, who bears high the diadem of Upper Egypt, beloved by Ra the king of the two lands (Ra men cheper). Honus crowned with victory and rejoicing, who strikes the princes of the foreign countries, to.coc are his whenever he raises his war-hatchet to give to Rapower over all the countries. All the strength is united in his hands to increase the joyfulness of the Son of the Sun, who is endowed with power, life and constancy (Thothmes).

No. 2.—Central Column of Thothmes III.

The kingly Horus, pow. rull Bull, crowned in Thebes, the lord of the diadems, whose royalty is expanded like the sun in heaven. (Beloved of 1um. Lord of Heliopolis, son of the lions, that created him Thothmes). They created him in the great abode, from the perfection of their lims, so that he will make an extended royalty for centuries. The King of Upper and Lower Egypt (Ra men cheper).

Belived of Tum, the Great God, and the gods of his circle, gaving all life, stability and happiness like the sun forever.

10. 3—Central Column of Thothmes III.

The royal Horus, the powerful Bull, crowned in Thebes, the king of Upper and Lower Egypt (Ra men cheper).

10. 4.—Central Column of Thothmes III.

The royal Horus, the powerful Bull, beloved by Ra, the King of Upper and Lower Egypt (Ra men cheper).

10. 5.—Lateral Columns of Rameses II.

The kingly Horus, the powerful Bull, son of the Sun, the King of Upper and Lower Egypt, the Lord of the diadems, who protects Egypt, and chastises the nations, son of the Sun (Ramesson meria mon), heroic king, active with his hands on the surface of the world (Ra ouser ma Sotepen Ra, son of the Sun, Ramesson meria mon), living to eternity, like Ra o. 6.—Horus, the powerful Bull, beloved of Ra, the King of Upper and Lower Egypt (Ra ouser ma Sotepen Ra), Lord of Panegyrics, like his father, Ptah Solousen, son of the Sun (Ramesson meria mon). Ra has generated him to set in festivity On (Heliopolis) and to accumulate offerings in the temples which he has generated, the Lord of the two worlds (Ra ouser Sotepen Ra), son of Ra Ramesson meria mon), giving life to eternity, like god Ra.

7. —The kingly Horus, powerful bull, beloved by Ra, the King of Upper and Lower Egypt (Ra ouser ma Sotepen Ra), son of the Sun (Ramesson meria mon), a not be youth of kindness like Aten, blazing at the horizon, lord of the two lands (Ra ouser ma Sotepen Ra), son of the Sun (Ramesson meria mon), a not be youth of kindness like Aten, blazing at the horizon, lord of the two lands (Ra ouser ma Sotepen Ra), son of the Sun (Ramesson meria mon), a be sole lord, master of the Sun (Ramesson meria mon), a be sole lord, master of the Wingly Horus, the powerful Bull, son of Cheper Ra, the King of Upper and Lower Egypt (Ra ouser ma Sotepen Ra), son of the Sun (Ramesson meria mon), a son-generator of gods, lord of the two lands (Ra ouser ma Sotepen Ra), son of the Sun (Ramesson meria mon), a son-generator of gods, lord of the two lands, son of the Sun (Ramesson meria mon), of Upper and Lower Egypt (Ra ouser ma sotepen Ra), the g

so.—The kingly Hoavs, powerful Bull, son of the Sun, the King of Upper and Lower Egypt (Ra messon ma sotepen Ra), the golden hawk son of the Sun

(Ra messon meri amon).

II.—The kingly Honus, powerful Bull, beloved by Ra, the King of Upper Egypt (Ra ouser ma Sotepen Ra), lord of the panegyrics, like his father PTAH. lord of the panegyrics, like his father PTAH when the Sun (Ra messon meri amon).

II.—The kingly Honus

The square tableau on the pyramidion of the obelisk shows the god Ra and King Thothmes III. seated cn a throne; before them the Sphnix, emblem of physical and intellectual

force.

The names in *italics* are names of divinities, and those in **small** capitals are names of kings.

The obelisk, like the pyramid, is a solar emblem, probably representing the rising, as the pyramid probably represents the setting, sun. Any single vertical monolith not exactly a column is commonly described as an obelisk, but the description is not correct. An obelisk, or tekhen, is a monument composed of a single quadrangular upright stone, having its four sides inclined toward each other, and, in section, all its angles right angles, and all its sides parallel to each other. Its hight is not less than that of ten diameters taken at the base, and its apex is abruptly terminated by a small pyramidion, whose faces are inclined at an angle of about 60 degrees. An obelisk was generally sup-ported on a quadrangular base, in hight approximating a cube and a half, and which is also, like the obelisk, formed of a single stone, further supported by three broad and deep stops. The sides of an obelisk or its base need not have in section the same width, provided that each opposite side is exactly equal, but all the lines of the monument must be right lines and it must have no more than four sides. It may be in-scribed or not, but the ornamentation is scribed or not, but the ornamentation is never in relief other than the low, sunken relief used in Egyptian art, and the inscrip-tion is always vertical with the lines of the monument and not horizontal. The obelisks of earlier periods are generally the largest and simplest in execution. The material is granite or a hard sandstone, capable of beng well cut and of receiving a high polish. The red granite of Syene was most commonly used—27 of 42 known obelisks, including our own, being of that material. When the faces of the pyramidion were not sculptured with votive vignettes, it was covered with a cap of either bronze or gold. The obelisk was considered the special and technical symbol of the all powerful Ra, the rising and mid-day sun, inasmuch as its sharply defined lines and narrow proportions, con-joined with its immense hight, gave no imsands of the Libyan Desert.
Syene (Assonan), "Egypt's extremest boun-

dary, where Juvenal pined in exile, where the first cataracts burst through the gates of Egypt, where are the grand quarries which have supplied all the roseate granite obelisks of Egypt" is well-nigh 750 miles from Alexandria, so that even to reach the Nile delta the obelisk saw not a little travel. One unfinished needle, not yet reft from the parent rock, still lies in the quarries as if but recently and temporarily deserted by the crated anachronism, as the title has been borne by our monolith for ages past, and it has been familiar to all Christendom as "Cleopatra's Needle" during the whole period of the modern history of Europe and distances are holes, into which dry wooden plugs were firmly driven; then the groove was filled with water, the wedges swelled and a fragment over a hundred feet long and 12 feet square was cracked away. A coarse saw was perhaps used to deepen the cuts. itself off from the rock by its own weight, a rather singular proceeding, which risked

the safety of the monolith.

There are no two sides of the obelisk or of the pedestal equal in width, and the sec-tions through it are trapeziums. All the squares are calculated through their axes:

Square of pedestal at base..... Square of pedestal at top......... Hight of bottom step at foundation... Hight of middle step of foundation. Hight of top step at foundation.... Hight of foundation, pedestal and obelisk.
Width of bottom step 1 6
Width of middle step 1 2½
Square of foundation at base 17 8
Square of foundation at top 12 3½
Hight from drive to bottom of foundation Hight from drive to tip of obelisk...... Elevation of site above mean high water. Hight of tip of obelisk above mean high

Total net weight ..... The obelisk has been moved, since it was taken down, 5382 nautical miles by water and 11,520 feet by land.

.210%

Weight of the obelisk..... Weight of the pedestal.... Weight of the foundation.

#### WASHINGTON NOTES:

The Hoop Iron Question-The Eaton Bill and the Tariff-The Treasury Rulings on Tank Iron-Inter-State Commerce.

(From Our Own Correspondent.)

WASHINGTON, D. C., January 26, 1881. The following gentlemen representing the noop-iron interest, James McCutcheon, of Lindsay & McCutcheon; John L. Kennedy, of Painter & Sons, and Mr. Townes, of William Clark & Co., of Pittsburgh; Henry Wick, of the Youngstown Rolling Mill, and Wick, of the Youngstown Rolling, Mill, and Mr. Cartwright and W. H. McCurdy, of Cartwright, McCurdy & Co., of Youngstown, Obio, and James Carnes, of Kimberly, Carnes & Co., Sharon, Pa., had a hearing before Secretary Sherman on the 22d iust. Through the free-trade Assistant Secretary who gives out the decisions or rulings of the department, this question had become somewhat mixed, and the gentlemen named came here to have a plain talk with the Secretary on the subject. The Secretary invited Assistant Secretary French and Mr. James, chief of the customs division in the Socretary's office, to be present.

The attorney of the hoop-iron interest said that there was not much to say that was salient points of the subject. What the hoop-iron industry wanted was some definite construction of the law. The fact that a strip of hoop iron had a rivet on it and was varnished, did not constitute it an article of manufacture to be taken out of the category of hoop iron at a specific rate of 11/2 cents per pound, and make it 35 per cent.
ad valorem. He then took exception to the
decision that a certain class of exton tie
with a fixed buckle should be classed as a
manufacture of iron not otherwise provided

Mr. McCurdy, of the firm of Cartwright, McCurdy & Co., thoroughly explained the difference in cotton ties. A tie, consisting of a strip of hoop iron 11 feet long, was nothing more than an attempt to evade the duty; and, pointing to the riveted end, remarked: "That, gentlemen, is the dishonest end, and the other without the rivet is the honest end." He said that the putting the rivet in cost \$1 a ton to the English manuacturers, and \$18 a ton loss of revenue to

the government.

Another attorney spoke on the law and ethics of the case, claiming that the question now is whether a little varnish and a buckle puts it out of the specific rate.

Mr. McGinnis, representing the working classes in this industry, spoke of the suf-fering which would follow a loss of protection, and hoped the Secretary would promptly and satisfactorily decide.

It is evident, from the number of petitions being received here, that the manufacturing interest of the country is thoroughly aroused on the tariff question. The bill introduced into the Senate by Mr. Eaton, December 17, The bill introduced defined lines and narrow proportions, conjoined with its immanse hight, gave no imperfect representation of a ray of light seen darting vertically downward through the crevices of gathering clouds. Granite was chosen as representing the external supersulting the external supers Thus the votive monument of the Pharachs became a Roman trophy, and that obelisk which had been constructed at vast expense and labor to record the majesty of the Function Transition Tran small places more orless affected by incessant talk of changes in the tariff laws.

The tariff question, at any rate, has lost an immense amount of caste among the Democrats since the Presidential election of November, 1880. This feeling has grown to such an extent that a Democrat will have nothing to do with the subject. Representative Tucker informed your correspondent discussions, and an account of the visits support of even a fraction of his own party, so that the duty on hoop iron, so far as the House of Representatives is concerned, will remain at its present specific rate. The House of Representatives is concerned, will remain at its present specific rate. The Committee on Ways and Means vesterday put a quietus on Mr. Frank Hurd's Cobden Club tariff resolutions, by determining to make an adverse report.

There is every prospect of the passage of the Eaton bill, now on the calender. Several Democrats will make an effort to get it up. As this subject is now attracting public attention, we reproduce the bill in full:

A BILL to provide for the appointment of a

the tariff. the tariff.

Be it enacted by the Senate and House of Kepres-ntatives of the United States of America in Congress Assembled, That a commission is hereby created, to be called the "Tariff Commission," to consist of nine

members.
Sec. 2. The President of the United States 

sation for their services, each, at the rate of ten dollars per day when engaged in active duty, and actual traveling and other necessary expenses. The commission shall have power to employ a stenographer and a messenger; and the foregoing compensation and expenses to be audited and paid by the Secretary of the Treasury.

Sec. 3. It shall be the duty of said commission to take into consideration and thoroughly investigate all the various questions relating to the agricultural, commer-cial, mercantile, manufacturing, mining and industrial interests of the United States, so far as the same may be necessary to the establishment of a judicious tariff or a revision of the existing tariff upon a scale of justice to all interests; and for the purpose of fully examining the matters which may come before it, said commission, in the pro secution of its inquiries, is empowered to visit such different portions of the country as it may deem advisable.

Sec. 4. The commission shall report to Congress the results of their investigation, and the testimony taken in the course of the same from time to time, and make their final report not later than the first Monday

in December, 1881.

There is much complaint to members of Congress by manufacturers of tank iron, that the rulings of the Secretary of the Freasury in reference to the importation of this class of iron are unjust. The proprietors of the Valley Iron Works, at Coatesville, Pa., in a letter complain that large orders have gone abroad for tank iron, which is imported as worked iron at a duty of 35 per cent. The complaint is that under a ruling of the department this iron can be laid down in New York at 2½ cents per pound, while no American mill can put down the company to the company down the same iron, without the additional labor of punching, for less than 2.6 cents per pound. It is claimed that something must per pound. It is claimed that something must be wrong if this same iron, which when im-ported plain without punching pays a duty of \$30 per ton, can be admitted, with the additional labor placed thereon, at 35 per cent duty. The leading oil companies are importing iron in the advanced state of manufacture at lower rates than the mills can make it can make it.

The triends of the Inter-State Commerce Bill are making renewed efforts to accure its consideration, at least in the House. The McLane substitute seems to attract most atnew, as the question in various forms had been gone over several times; he would confine himself strictly to presenting the roads, consisting of the Secretary of the Inroads, consisting of the Secretary of the Interior, Assistant Secretary of the Interior, the Auditor of Railroad Accounts (to be styled the Commissioner of Railroad Affairs), the Railroad Engineer in the office of the said Commissioner of Railroad Affairs, and an officer or employee of the Department of Justice, learned in the law, to be designed by the Attorney Govern Thouse. designated by the Attorney-General. Though a somewhat cumbersome arrangement, this plan is favored, as the Reagan bill creates a board of three commissioners as a Bureau of the Interior Department, the officers to be appointed by the President for a term of six years. This McLane substitute limits the general supervision of the board to charges made by common carriers and the safety of travel and movement as affecting Inter-State commerce; to investigate complaints in regard to charges by common carriers; may summon and compel witnesses to appear and produce books and papers; may compel compliance on the part of common carriers to obey any changes recommended in the way any common carrier conducts his busi-ness; it also compels all railroads and common carriers to report annually their operation to the Board. The substitute also provides additional compensation to the officers performing this extra service. The McLane scheme has the merit of organization commensurate with the importance of the in-terests involved. The Reagan scheme, though very acceptable, is regarded as crude in some particulars. The McLane substitute, from all indications, is the most likely to be

adopted, if any, at this session.

The Department of State is in receipt of the latest tariff schedule of the government of Guadeloupe. The following are the duties on the imports named, the full schedule being 1879, and reported back April 13, 1830, by on the imports named, the full schodule being Mr. Bayard, from the Committee on Finance, with certain amendments, passed that body and is now on the calendar of the House. The petitions received here by Rep-

#### NEW PUBLICATIONS.

THE JOURNAL OF THE IRON AND STEEL INSTITUTE, 1880. No. II. Published by E. & F. N. Spon, London and New York.

read at the Duesseldorf meeting, with the tative Tucker informed your correspondent to-day that his hoop iron bill was dead; that it would be needless to bring it up, as he Germany's greatest producing districts.

was doubtful whether it would receive the The volume again contains Mr. J. S. Jeans summary of progress, in which we would note some improvement.

> English Blast Furnaces.-The Iron Trade Circular publishes the following list, showing the number of blast furnaces in operation in Great Britian on the 30th June and 31st December, 1880:

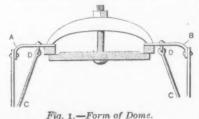
| 4 |                      | -Fur. E | milt.— | -Fur. is | a bl't |
|---|----------------------|---------|--------|----------|--------|
| ١ | England.             | June    | Dec.   | June     | Dec.   |
| 1 | Cumberland           | 58      | 54     | 35       | 4.2    |
| 1 | Derbyshire           | 54      | 57     | 39       | 4.1    |
|   | Durham               | 59      | 60     | 3.0      | 26     |
| 1 | Gloucester hire.     | 9       | 9      | 3        | 2      |
| Ì | Hampshire            |         | 1      | 10       | .0     |
|   | Lincolnshire         | 18      | 18     | 1.4      | 15     |
|   | Lancashire           | 51      | 5.8    | 1.6      | 33     |
|   | Northamptonshire.    | 21      | 25     | 2.5      | 57     |
| 1 | Northumberland       | 4       | 4      | 4        |        |
|   | Staffordshire, South | 240     | 146    | 4.3      | 44 23  |
|   | " North              | 37      | 36     | 2.0      | 2.3    |
|   | Somersetshire        | I       | I      | 2        | 1      |
|   | Shropshire           | 25      | 25     | 12       | 11     |
|   | Wiltshire            | 48      | 2      | 3        | 3      |
|   | Yorkshire, W Riding  | 48      | 49     | 3.8      | 38     |
|   | " N Riding.          | TOI     | 101    | 83       | ga     |
|   |                      |         |        |          | -      |
|   |                      | 636     | 644    | 353      | 385    |
|   | Wales.               |         |        |          |        |
|   | North                | TO      | 10     | 7        | 6      |
|   | South                | 151     | X34    | 73       | 78     |
|   | Scotland             | 850     | 151    | 210      | 124    |
|   |                      |         | -      |          | -      |

#### Polytechnic Club of the American Institute.

The Eleventh Street Boiler Explosion.

The president, Mr. Stetson, opened the discussions of the evening by bringing up the subject of the explosion of the boiler in Eleventh street, belonging to the Methodist Book Concern Building. It will be remembered that the boiler exploded at about 20 minutes to 5 on Sunday afternoon, January 16. The boiler was one of a pair placed under the sidewalk. It was 16 feet long, 34 inches in diameter, with a 32 inch drum 24 inches high. The head of the drum was fitted with a manhole of larger size than usual. The head of the steam drum was decaded in the way way and held by size flanged in the usual way, and held by six stays. The boilers are about 12 years old, and were inspected in August and tested to 100 pounds. They were allowed to carry

70 pounds per square inch, and at that point the safety valve was set. After the opening statement, Mr. Blanch-



ard said that probably in this, as in most similar cases, somebody had lied, and this was a very common explan-ation of boiler explosions. If we take the account of those in charge, nobody is ever careless or neglectful. They say that they have just looked at the gauges, examined the fires, noted the hight of the water, and that, so far as human knowledge could go, everything was all right. Now, there is a great amount of carelessnes incident to all human action, and those in charge of our

boilers are no exceptions to the general law. It is natural, after the accident happens, that they should make the best possible story for themselves, and they do so accord-

ingly.

Mr. Sutton: "I want to know what carelessness had to do with this explosion. lessness had to do with this exposion. Blame enough falls on engineers without attributing it to them, when sufficient reasons for the exposion can be found without impeaching them. This boiler was of the poortable property of the p est character in some respects. I examined it but a short time after the explosion, and what I saw satisfied me as to the causes. The top of the drum, with its manhole plate, b'ew out of the boiler without disturbing the boiler itself, and left each and all of the six braces standing in place. The bolt had drawn from the plates and the head had drawn from the plates and the head had gone. It was torn out without disturbing the rivets which secured the flange to the dome. A poor piece of iron had been used for the head; it was placed within 9 inches, or thereabouts, of the side-walk, where it could not be examined, and leakage and dripping from above, very likely, added corrosion to weaken the already unsafe sheet. The head was flanged in the usual way, and riveted was flanged in the usual way, and riveted inside of the drum. In its center was a large manhole opening, the edges of which were strengthened in the usual way. When in place the whole was a tolerably rigid mass. This head had broken out clean at the line where the plate was burst in flanging. Supposing the break started in the bend at some point parallel with the line of the floer. some point parallel with the line of the fibers of the plate, it is evident that the head tore out, drawing the bolts one at a time, and finally letting go, went out bodily. Under other circumstances a crack would have been a crack only, and have allowed an escape of steam; here, in the poor iron, it tore calong in the weakest part. Such a plate probably, was not large enough, as is comalong in the weakest part. Such a plate would have a grain almost like wood, and at certain portions would be exceedingly weak. The stay, although of the poorest possible form (welded eyes on a round rod), were all uninjured." In reply to questions, Mr. Sutton said that the iron was fibrous, but that his opportunities were somewhat limited, as a policeman was pushing him pretty hard to

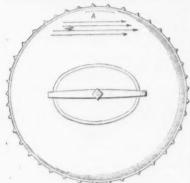


Fig. 2.-Plan of Head.

get him out of the way, and he did not wish

to say that he was an expert.

The accompanying sketches, made from Mr. Sutton's drawings upon the blackboard,

illustrate the points made.

Fig. 1 shows, in a general way, the form of the head of the steam dome with its manhole plate, &c. The points A B show the position of the break where the head separbole plate, &c. The points A B show the position of the break where the head separated from its flanges. C C are the stays and D the round eyes, the welds of which had not opened. Fig. 2 shows a plan of the head; the horizontal arrows show the supposed line of the grain of the iron, or the direction in which it passed through the

ceive attention, as it might throw light upon the cause of the high pressure in the boiler. Automatic pressure records show that when boilers are banked at night with a low pressure of steam, the pressure remains nearly constant for some hours; but as the heat penetrates the fresh coal on top of the fire penetrates the fresh coal on top of the fire and it begins to burn more strongly toward morning, say at 3 or 4 o'clock a. m., the pressure gradually creeps up, until it often reaches the boiler pressure of the daytime. It might have happened that the 3-pound pressure at 1.30, observed by the engineer, was correct, and that the fire burned faster than yearly so that at the time of the explo-

than usual, so that at the time of the explosion the pressure was fully up to 70 pounds.

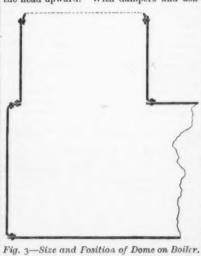
Mr. Sutton: "It is reported that the damp ers were found open after the explosion.

Didn't these dampers blow open? Such an occurrence is one of the commonest experiences with practical men when anthracite is used. Do not say a word against the en-gineer, for doors and dampers might have been thrown open by a gas explosion after he left, as often happens after banking a fire."
The example of the frequent gas explosions, on a small scale, in the Hudson street dummies was instanced. Such explosions were quite common with an engineer, and when his doors were blown open he only got up and shit them again.

shi t them again.

Dr. Van der Weyde, in reply to questions in regard to explosive mixtures of gas and air, said that the suggestion was a valuable one. Facts in abundance could be cited where similar explosions had occurred. He was resulting explosions and occurred. He gave some details of an explosion in a flue, about 10 years ago, in the Bessemer works at Troy, which did no little damage. The doctor was present at the time and made an investigation of the facts. The explosive character of combustible gases was mentioned and examples of explosions of explosio tioned, and examples of explosions of empty petroleum barrels, where air had been mixed with the petroleum vapor, were given. In conclusion, he said it was plain how the pressure in the boiler would have gone up rapidly, if from a gas explosion the dampers had been blown open.

In reply to a question from Dr. Trimble, Dr. Van der Weyde said that the immense volume of steam and the great force of the explosion were easily accounted for. In round numbers, the head of the drum had an area of 800 square inches, being, say, 32 inches in diameter. Each pound of pressure in the boiler represented 800 pounds, forcing the head upward. With dampers and ash-



pit doors open, steam would be generated with great rapidity, and when 70 pounds were reached the total pressure would be no less than 56,000 pounds, or 28 tons—a force amply sufficient to have done all the damage that was noticed. Replying to Dr. Parmalee's question in regard to what the safety valve was doing at the time, he said

It was then stated that steam had been blowing off for some time previous to the

monly the case.

explosion.

It is not necessary to adopt the theory given in Mr. Park Benjamin's letter to the Herald, in order to account for the explosion. Its fallacy was shown by the fact that the vaporization of a single pound of water would rob the boiler of 1000 units of heat and so lower the temperature and reeat, and so lower the temperature and reduce the pressure. The boiler gave way be cause the pressure was greater than its weakest part was able to bear, and that pressure had gone up gradually. An explosion of a carbonic acid gas receiver in France was instanced to show that steady pressure of an elastic gas was able to produce destructive explosions. The doctor then laughingly alluded to a plan to put the boilers outside of the ship at the stern as a safeguard. Then, if an explosion took place, neither passengers nor ship would be injured.

Dr. Trimble spoke of the great interest attaching to this case, because there are so many boilers under the street. There are in the city 4011 engines and boilers, 720 of which are insured, and more than half of the whole number are said by the Bureau of Boiler Inspectors to be under the side-walks and streets. Heavy blocks of stone, bricks and weights amounting to more than 100 pounds were scattered by the explosion, thus indicating the great danger of placing

boilers in this position.

Mr. Sutton: "Isn't this the safest place for a boiler?"

Dr. Van der Weyde answered "Yes," and

direction in which it passed through the rolls. A break beginning at A would be solitting the fibers, rather than breaking them in two. Fig. 3 is a diagram showing them in two. Fig. 3 is a diagram showing the general arrangement of the boiler and dome; the dotted line shows the position of the bead that was blown out.

Mr. Sutton said: "I defy you to kill more than ten people by an explosion under the solitting the fibers, rather than breaking sidewalk, yet hundreds might be destroyed with an explosion in a building. It is a vastly better place for them than under the building. We cannot have safety till we give men proper wages, so that we can have dome; the dotted line shows the position of the head that was blown out.

Mr. Sutton's report was particularly valuable, as his great experience enabled him to take in the salient features of the explosion before there had been any meddling with the wreck.

Mr. Partridge said that there was one fact not generally known which should re-doing their work. It had been tested by

water pressure, but," he remarked, very suggestively, "it was none the better for that."

The engineer should have known how to go over the boiler and test it with his light riveting hammer. Such testing can be done

with a 3, or even a 2 ounce hammer.

The value of the hammer test in detecting flaws in iron was then discussed, and Mr. Sutton showed that small flaws in single rivets could be found by the hammer, and a light one at that. Engineers seem to neglect this, while on railroads the greatest attention is paid to this method of testing, and by it all car and engine wheels are examined. The immense quantity of steam which escaped caused a further discussion. It was shown that the volume from this boiler, when three-quarters full of water, would amount, at atmospheric pressure, to about 14,700 cubic feet. The other boiler added a great quantity to this perhaps amounting to at quantity to this, perhaps amounting to half as much more.

Dr. Vander Weyde took up the subof the hammer for testing, explained how of the hammer for testing, explained now in medicine the most valuable information could be obtained from percussion of the different portions of the human body, and said it might be equally valuable to the engineer in obtaining a knowledge of the condition of metal &c. Engineers should be trained men.

trained men.
"But, Poetor," said Mr. Sutton, "they g t "Yes, sir, that is the trouble. They are not paid enough to know anything. There was the engineer of the exploded steamer

mr. Sutton, again interrupting, "Oh, yes he did. It was something that 'smelled bad."
Dr. Van der Weyde: "Yes, that is true, he did say so. Our engineers must be men of liberal education—that is, they must have some knowledge ontside of that needed to open and shut the throttle and use the starting bar.

Here the Doctor replied to several ques-ions in regard to the form of the boiler, which was not bad, although not of the strongest pattern. In the Hague street ex-plosion, he said the large building was raised bodily in the air and dashed upon the ground. Fire completed what the explosion began. Here, had the boiler been under the street, the danger would have been slight and the loss of life small.

The president, Mr. Stetson: "Under the street is, without doubt, the safest place to put boilers in a large city. The ordinances direct that, when practicable, the boilers shall be placed under the sidewalks rather than within the buildings. The greatest safety is secured when the boilers are made from a series of small pipes, as in the Bab-cock & Wilcox, the Perkins, and other boilers of the tubulous class. In case of a defect, instead of an explosion, a pipe merely opened and steam was blown off. The safety valve should be of such a character as to be able to relieve any under pres sure, but, unfortunately, it is frequently much too small. The 'pop' valve, used upon locomotives, is particularly valuable, because it can be set to blow off at one pressure and remain wide open until the pressure has been

reduced many pounds."

Mr. Partridge then spoke of the danger attending the use of boilers having large water spaces, and pointed out the fact that the most destructive explosions have always been of boilers containing large quantities of water, without regard to the pressure car-ried. The immense mass of water acted as

a reservoir for heat, and if the pressure is suddenly reduced, a very great proportion of this heat may be transformed instantly into power, which is expended upon the shell of the boiler. Illustrations are found in the facts of most explosions of large boilers taking place just after starting of the en-A number of instances were then

Hr. Hudson here presented a report, illus trated with diagrams showing a plan for rearranging the seats in the Polytechnic room. By the proposed arrangement some 16 seats would be gained, while the aisles, transferred to the back of the room, would permit passing in and out without disturbing the speakers. The audience would also be much more comfortably disposed. Upon vote it was decided to take steps to carry

out this very important improvement.

Prof. Van der Weyde's remarks on the photophone, and the discussion which followed, will be given next week.

The Connellsville Gas Coal Company own about 3100 acres of coal land in the Connellsville region, Pennsylvania. The com-pany have recently sunk a shaft on their land and struck the coal at a depth of 304 feet. The vein is about 9½ feet thick which is about 1½ feet thicker than the avwhich is about 1½ feet thicker than the average throughout the region, and the coal is of remarkable purity, possessing the required properties for the manufacture of coke in a very high degree. An impartial analysis of this coal, recently made by Prof. Charles P. Williams, of Philadelphia, gives: Fixed carbon, 64.18; coke, 70.30; ash, 6.12; and sulphur, o.6. These figures are considerably in advance of the highest analysis hitherto known of Connellsville coal. The company expect, in the course of coal. The company expect, in the course of two months, to have their shaft lined and prepared for hoisting, 100 coke overs brilt and their railroad connections completed, and hope to commence the manufacture of coke by April I. There is some probability that they will erect 100 or 200 more overs in the spring. The town of Trotter has been built by the company on their land, about 1 1/2 miles from Connellsville. It consists of 82 tenement houses and one large store building, together with offices, machinery About 1000 acres of the com



Of Every Description, Nos. 17 & 19 Green St., Albany, N. Y., Dec. 8, 1880.

To Ail Whom it May Concern:

To-day a decree in my suit against G. T. Fisher & Co., of Detroit, for an infringement of my patent, was made and entered of which the following is an extract: At a session of the Circuit Court of the United States for the Eastern District of Michigan, held at Detroit, on Wednesday, the 8th day of December, 1886.

Present. Hon. H. B. Brown, District Judge.

NELSON LYON YON T. FISHER, et al.

GUYON T. FISHER, et al.\(\)
It is ordered, adjudged and decreed, that the act entitled "An act for the relief of Nelson Lyon and Jeremiah s. James," passed by Congress and approved April 1, 1850, &c., is a good, valid and constitutional act. That the original patent, bearing date July 9, 1872, and numbered 128.843, granted and issued to Joseph Barsaloux, Jeremiah S. James and Nelson Lyon, when corrected by the Acting Commissioner of Patents, as the control of the correct of the patents of the control of the correct of the cor

All questions as to damages and settlements in relation to infringements under my patents must be addressed to and made with my attorney, William H. King, in my care, at the above address.

NELSON LYON.

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We make Seven Sizes of Roller Mowers and Six Sizes of Side-Wheel

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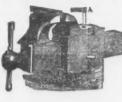
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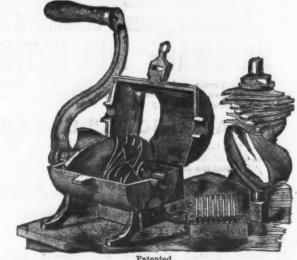
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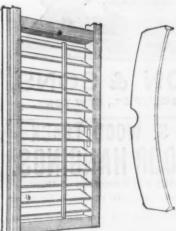
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KIMBALL SHOVEL CO., Sole Manufacturers, Office, 67 GERMAN STREET, BALTIMORE, MD., U. S. A.

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The holder is securely held by its spring and the sharp points at each end. As it is made of brass it will not rust.

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others do. Retail Price, 5 cents each; 50 cents per dozen; At which price samples will be mailed postpaid.

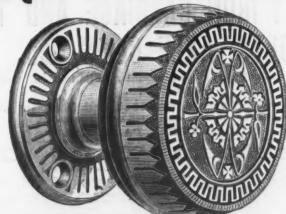
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We have issued, under date of June 10. a complete revised Price List, a copy of which, with our 1879 Illustrated Catalogue, will be furnished to the trade free on application. Said Catalogue contains llustrations and descriptions of over 1000 different varieties of Door Locks, Knobs and Escutcheons.

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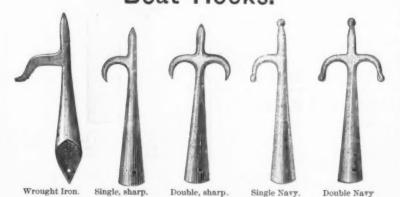
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Boat Hooks.



Prices furnished on application.

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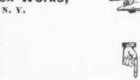
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SHOOTING GALLERY RIFLE

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FERRIS & AVERY, Chicago, Agents for Paragon Axle Grease.

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The Purity and Strength of this Coal especially adapt it for the working of Iron and Metals.

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American Nickel Works, Camden, N. J., Aug. 1, 1880.

ANODES.—I am now prepared to supply PURE ROLLED NICKEL ANODES in any quantity.

PURE HOLLED NICKEL ANODES in any quantity.

These superior Anodes wear away in the solution evenly and completely, like rolled silver or copper plates, thus avoiding the vexation and loss caused by the crumbling and breaking of cast Anodes. They plate very evenly and regularly.

Though necessarily higher in price per pound, they are so much thinner (usual thickness 3-32 inch that to furnish a tank of any given size costs but about half as much as if furnished with cast Anodes.

Though perfectly protected by my patent for Malleable or Rolled Nickel Anodes of Jan. 6, 1880, as well as by Dr. Flei mann's patent for making nickel malleable (of which I am sole and exclusive American licensee), I make no charge of royalty for the use

I make no charge of royalty for the use

which are quite free from any patent claim of any other parties for Nickel Anodes. SOLUTION.—In order to meet the wants of who prefer to make their own solutions, r make NICKEL OXIDE of high purity easily soluble in any acid. It is better for purpose than metallic nickel or nickel car

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The rapid increase in the use of Nickel-Plating owing to the introduction of the Weston Machine and the very low price of nickel material, enables us to give greatly reduced estimates for complete

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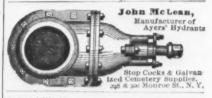




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Wyckoff Patent Wood Water Pipe, Chain Pump, Tube, Curbs, Reels, Rubber

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#### LOCKS AND DOOR HARDWARE,

BRONZED IRON AND BRONZE METAL DOOR TRIMMINGS, BUTTS AND HARDWARE.

CAST BUTTS, DOOR BOLTS WELL WHEELS. FLUSH BOLTS, SHUTTER BOLTS, PAD LOCKS,

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Having largely increased our facilities and line of gooods, we invite the attention of the Illustated Catalogues Furnished on Application.

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RAILROAD OR CANAL BARROW.

With Jacobs' Patent Wheel.



Full sized, bent tray, planed and well finished. Bolted securely to frame. The legs extend up ward, serving as a brace to the bowl, to which they are also bolted to handles. This Barrow has the Jacobs Patent Wheel, superior in every way to any iron wheel manufactured. The wheel revolves on a fixed axle bolt, similar to a buggy wheel. The axle bolt holds the barrow firmly together. The barrow for Railroad Contractors. Will outwear any other made, and displaces others wherever introduced. Wheel painted. We also manufacture a full line of

ORE, BRICK, STONE and CARDEN BARROWS.

Road Scrapers, Road Plows, Levelers, &c.

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SUCCESSORS TO THE Union Spring Co.

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A Pronounced Success. all mechanics and builders cheapest Spring made. or pins to be broken easiest and most persomest, as well as the

Acknowledged by to be the best and No small castings or lost. The simplest, fectly adjusted. The handmost durable Spring made.

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#### STAMPED & JAPANNED TIN WARE

Retinned Ware, Plain Pieced Tin Ware, Bathing Apparatus. Toilet Ware, Tin Toys, Spoons, Flesh Forks, Cake Turners, Coal and Fire Shavels, Pokers, Fry Pans, Stove Skillets, Coal Hods, Coal Vases, Water Coolers and Filters, Harness Oil Cans, Soldering Coppers.

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Dripping Pans, Elbows, Milk Cans and Fixtures, Roofing Nails, Stove Boards, Transportation Cans, Buffalo Champion Ice Cream Freezers. PERFORATED SHEET IRON FOR PAPER MANUFACTURERS AND MALT KILNS

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Worcester, Mass., U. S. A., Manufacturer of

Self-Feed Drills.

For Blacksmiths' and Carriage Makers' Use.



This cut represents my No. 2 Improved Drill, double geared. so arranged that by moving the rank from A to B it will give a slow motion for neavy drilling to the drill spindle.

The Oldest Shot Tower in America.



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American Chilled Shot, Rivaling the English and all Others.

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Bridgewater Iron Co., Bridgewater, Mass., Manufacturers of SEAMLESS DRAWN COPPER AND BRASS TUBES, TACK PLATES, Forgings of every description. Bridgewater Iron Co.'s HORSE NAILS.

Nos.... 5 6 7 8 9 10 Per lb..26¢ 33¢ 21¢ 20¢ 19¢ 18¢ Liberal discounts to the Trade. 73 Pearl Street, New York. 28 Broad Street, Boston.



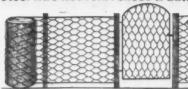
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Unsurpassed for cheapness and dura bility. Unlike any other make, it comother make, it com-bines a perfect lever principle with a blade working in a slotted steel hook. Send for circular.

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Full Leather, \$7.50. Half Leather, \$6.50. Pocket Edition, Full Leather, \$3.50. DISCOUNT Bolt List, \$1.50. Screw List, 50 cents. Leigh's Discount Book, 50 cents. Address all orders to Pope & Stevens, General Agents, 90 Chambers Street, N. Y. For sale at publisher, said to the street, N. Y.

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MANUFACTURERS OF

Improved Upright and Horizontal Upholsterers', Stationers', House Furnishing & Fancy

The Turner and Seymour Mfg. Co. have been longer in the business and make a greater variety of Cast Iron Scissors and Shears than any other concern in the world. Our "AMERICAN" SHEARS

have long been conceded to be the best ever made. The quality and finish of these goods shall always be maintained.

To meet the demand for a cheaper line we offer the trade our

"CLIPPER" SHEARS.

On these we cannot be undersold. Price is about 25 per cent. less than the "American."

We are now making a fine line of cheap

Nickel Plated Scissors and Shears, Nut Picks, Nut Crackers, Fruit Knives &c.

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## H. S. MANNING & CO.,



With Attachment for Taking the Tare.



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By using these Hangings you save the cost of iron They cannot be thrown off the track. We also manufacture

Anti-Friction and Check-back Hangings, Rail, Stay Rollers, &c.

Send for price list. MEDINA MANUFACTURING CO.,

SAMSON & SWETT, Props., Medina, N. Y.

NORWAY IRON CARRIAGE AND TIRE BOLTS, AXLE CLIPS, &c.

Highest and only Awards and Medals, Philadelphia, 1876, and Paris, 1878.

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Tool Chests of all Sizes. Adapted for the use of Boys, Youths, Gentlemen, Farmers, Planters, Carpenters and Railroads; fitted up complete with a superlor quality of Tools, and suited to the wants of the Hardware. Toy, Notice unished on application. Export trade solicited, and a full stock of large-sized Chests always on hand. Quality considered, we think our goods will be admitted by buyers the cheapest that have yet been owered by any manufacturer in the United States or Europe. MECHANICS' TOOLS AND HARDWARE SPECIALTIES.

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From Selected Stock, Thoroughly Seasoned, Well Made. Orders solicited from close buyers who want good work.

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Manutacturers of Common Mouse Traps, Porcelain-Lined Lemon Squeezers and House Furnishing Ware.

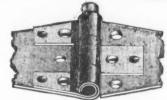
# Y WORKS, THE STANLE

NEW BRITAIN, CONN.,

Hereby announce to the trade that they have added to their line of STRAP AND T HINGES the following patented goods, of which they have a complete stock.

#### Hart's Patent Hinge.





Cut No. 1 represents Hart's Patent Heavy Strap Hinge; No. 2, end view of Hinge with pin partly driven out, in order to show the two thicknesses of iron which form the joint.

It will be noticed that the two thicknesses of iron referred to surround the pin throughout its length and extend back upon the straps of the Hinge, thus giving double thickness of iron at the points where most needed, and more than double the strength of an ordinary strap hinge. The short or inside leaves are galvanized, thus insuring easy working joints and

The screws or bolts for securing these hinges to the post and door pass through both plates of iron, and thus give great strength and firmness to the Hinge in addition to that imparted by the double thickness of iron: These Hinges are of about the same weight as Stanley's regular Heavy Strap, and have a list price per dozen instead of by the pound, thereby avoiding trouble of weighing.

Sizes. Price per dozen pairs,

10 6.60 12

14 Inch.

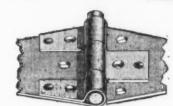
PLEASE USE CLASS NUMBER IN ORDERING.

9.40 12.00

A Line of Light Strap Hinges similar to above are in process of manufacture.

#### Wells' Patent Hinge.





No. 2.

Cut No. 1 represents Wells' Patent Heavy Strap Hinge; No. 2, an end view of same (pin not riveted) showing the end of strap formed around the pin and extending beyond

It will be seen from the cuts that the iron which forms the prongs of the hinge joint is lengthened and extended beyond the joint upon the straps of the Hinge, thus giving a double thickness of iron at those points which are weakest in the ordinary hinge, making the 6 in. Patent Hinge stronger than the ordinary 8 in.; the 8 in. stronger than the ordinary

The screws or bolts for securing these Hinges to the post and door pass through both plates of iron, and thus give great strength and firmness to the Hinge, in addition to that imparted by the double thickness.

Per dozen pairs

12 6.60 9.40

10

14 Inch. 12.00

927 Represents WELLS' PATENT EXTRA HEAVY T HINGE, with Straps made on the above plan.

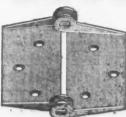


Class No. 927.

6 Per dozen pairs, PLEASE USE CLASS NUMBER IN ORDERING. 14 Inch.

# Record's Patent Hinge.





Cut No. 1 represents Record's Patent Heavy Strap Hinge; No. 2, the supports with flanges showing holes for pintle.

The main part of this Hinge is of the same width and about the same thickness as the ordinary heavy strap.

The joint is strengthened by supports made of extra quality of iron, firmly riveted to the back of the Hinge and having side ears, through which the pintle of the Hinge passes, thus especially supporting the one prong or weak part of the Hinge and adding greatly to its strength; also, by the additional thickness of iron, greatly stiffening the Hinge where most As the straps of the Hinge are bent down, forming an offset for the reception of the supports, the Hinge is smooth or flat on the back, same as the ordinary strap hinge. These Hinges can be applied wherever the ordinary hinge can be used.

12 Inch. 5.90 10.50 Per dozen pairs,

SAMPLES OF ABOVE PATENT HINGES FURNISHED ON APPLICATION.

A large and well-assorted stock of Wrought Butts, Door Bolts, Washers, &c., now on hand.

Factories, New Britain, Conn.

Warehouse, 79 Chambers St., New York,

#### The Matanzas Exhibition.

Every steamer leaving this port is taking out large quantities of exhibits for the International Exhibition to open at Matanzas on the 10th of February. Considerable interest is shown by our manufacturers, whose terest is shown by our manufacturers, whose names, as they are given at the office of the general agent for the United States, Nos. 40 and 42 Broadway, make quite a formidable list. A strong desire is expressed that exhibitors, so far as possible, shall participate in the ceremonies of the formal opening and have their goods in place, but all offerings will be received for some time afterward and he assigned to the best space avail. ward and be assigned to the best space available. Applications for space come in every day. The steamers of Ward & Co. and Alexandre & Sons transport goods both ways gratuitously, and space in the Exhibition building is given free of charge.
We are informed by the agent that all the local governments and railroad compa-

nies are co-operating cordially, and from the interest manifested in Mexico and all the Central American States, as well as in the West India Islands and South America, a gratifying degree of success is assured.

west India Islands and South America, a gratifying degree of success is assured.

The site chosen for the exhibition is described as very beautiful, in what is known as "Palm Park," about one hour's ride from Havana, and practically in the outskirts of that city. Havana would have been preferred to Matanzas, if a suitable spot could have been found. The best known among the American exhibitors are as follows: Matsou & Co., Japanese importers; E. F. Fairbanks & Co., Howe Scale Company, Remington & Co., Reed & Barton, Meriden Britannia Company, Collender Company, A. C. Corcoran, R. H. Allen & Co., Metallic Burial Case Company, Jewett & Co., Aiken, Lambert & Co., H. K. and F. B. Thurber & Co., George Lockwood, D. Appleton & Son, Cammeyer & Nason, Nestor Ponce de Leon, Lorenza Tomasselli, George Shields, Herring & Co., J. Gould, Page, Green & Co., Nueva Mundo Hustrado, Revista Agricola, e Industrial La Rumanera, Schvankiessen & Co. Agricola, e Industrial La Rumanera, Schvenkiessen & Co., Steiger & Co., Eaton (photographer), Pesant's Portable Rail-I, Sidney Barnett, A. Beggue, W. Con-Ollivotti Bros., Frothingham & Emory Ion, Ollivotti Bros., Frothingham & Emory, Hektograph Company, A Seaman & Co., Lovegrove & Co., Van Antwerp, Bragg & Co., Collins & Co., Smith & Wesson, C. Cobbs, Sarony, Readds' Writer's Economy Company, Mohr & Co., A. M. Halstead, American Bank Note Company, John MacCullum, Peters & Calhoun, Miller, Merison & Co., New York Condensed Milk Company, Fragar's Avia Graege Company, Languer, Markey, Condensed Milk Company, Languer, Markey, Condensed Milk Company, Languer, Markey, Condensed Milk Company, Markey, Markey & Co., New York Condensed Milk Company, Frazer's Axle Grease Company, Lanman & Kemp, Keogh & Co., Tyson Vase Engine Company, L. Spear & Son, F. Ferris & Co., John Colgate & Co., P. H. Van Riper & Co., the Fountain Company, Lalance & Grosjean Manufacturing Company, Hoopes & Townsend, George Blake Manufacturing Company, Hoopes & Townsend, George Blake Manufacturing Company, Leonard & Ellis, Brooklyn Clay Retort Company, J. Judson & Sons, Samuel S. Stafford, Seibert Cylinder and Cup Company, Trinore Metallic Company, Ohio Steel Barb Fenoe Company, Manhattan Packing Company, H. W. Johns & Co., Henry Disston & Sons, Bridgewater Iron Co., Pioneer Iron Works, White Sewing Machine Company, Nutter, Kimball & Co., Lemp & Co., Dudley Pray Company, A. Brushmann & Lordbacker, W. A. Force, Earle & Church, Miller Lock Company, Ironclad Manufacturing Company, American Encaustic Tiling Company, Cammeyer & Sayer, J. W. Wilcox & Co., Wm. MacFarland & Co., Libby, McNeil & Co., Boston Beef and Packing Company, Marshall Lefferts, Thaddeus Davis & Co., Wilson & Co., Vanderveer & Holmes, B. F. Avery & Sons, Rosenblatt & Co., Marks' Adjustable Chair Company, W. Wall & Sons, James Conner & Sons, Peter Rosenbach, Copygram Company, Hecht & Co., Anderson & Jones, F. Latasa. Boston and Philadelphia are well represented, and several of the Western States. The goods already shipped or forwarded comprise portable railways for plantations, portable houses, all sorts of apparatus employed in making sugar, a variety of textiles, & c. pany, Frazer's Axle Grease Company, Lanatus employed in making sugar, a variety of textiles, &o.

Tunnel Through the Palisades .-Chief Engineer Katta is getting his ma-chinery on the ground, preparatory to build-ing a double track tunnel through the solid mass of rock known as Bergen Hill, for the New York, Ontario and Western Railroad. Its length will be 4225 feet, and it will extend from Weehawken, on the Hudson River, westward to the Hackensack meadows at New Durham. The time within which this work is to be accomplished would have astonished people born before the era of modern engineering, as the contract says all must be complete one year from date, No-vember 19, 1880. The eastern approach cut measures 150 feet; the tunnel proper, 4225 feet; western approach cut, 2700 feet. The feet; western approach cut, 2700 feet. The earth cut comprises 131,000 yards; loose rock, 9000 yards; solid rock, 44,500 yards, exclusive of 79,607 yards on the tunnel proper. Hight of tunnel, 20½ feet; width, 27 feet. The shafts, five in number, involve 2103 feet of rock cutting; area, 7 x 14. The track will rise 25 inches per 100 feet to a point near the meadows, and then fall 40 inches per 100 feet. The new realessed will inches per 100 feet. The new railroad will give us a third route through the rocky barrier of the lower Hudson, of which the Delaware, Lackawanna and Western and the Erie are the first two.

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No. 53 Dey Street, N. Y.,

January 1, 1881.
The copartnership heretofore existing between ohn H. Butler and Teunis D. Huntting, under the run name of Butler & Huntting, flus this day been issolved by the withdrawal of said Teunis D. untting.

dissolved by the windutawar of same Feature 4.

Huntting.

Mr. Butler and Mr. John C. Constant have this
day formed a copartnership for continuing the
business at the same place, under the firm name
of Butler & Constant. Mr. Butler will pay all obligations, and receive all assets of the old firm of
Butler & Huntting.

JOHN H. BUTLER.

JOHN H. BUTLER, TEUNIS D. HUNTTING, JOHN C. CONSTANT.

WANTED.—A Hardware Business, consisting of from \$2000 to \$3000 worth of stock, in a good location, in or near Brooklyn.

Apply with full particulars to: S. M. T.,

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#### Special Notices.

## Rolling Mill for Sale SPECIAL NOTICE TO IRON MEN.

A Rare Opportunity for Investment.

The undersigned Assignee and Trustee of the RIVERSIDE ROLLING MILL COMPANY, a corporation organized under the laws of Ohio, invite proposals for

corporation organized under the laws of Ohio, invite proposals for the purchase of the property and real estate of the above-named Rolling Mill Company.

The opportunity is one of the rarest for Rolling Mill and Iron Men. The Mill is a new one, and is located in the village of Riverside, just outside of the corporate limits of Cincinnati. It has excellent river and railroad facilities, probably unsurpassed. The Plate Mill has capacity for a very large product, particularly of Boiler Plate of large dimensions. There are also a sixteen-inch Bar Mill and a Guide Mill, both having full complement of rolls. The Bar Mill and Guide Mill, have not been set up. The works have been in operation but a few months, and already have a large and lucrative custom. It has had more orders than could be filled, and is at present in operation, and is at present in operation, more recently under the practical direction of Mr. Wm. H. Carru-thers. The mill was built under the superintendence of one of the best men in the country.

#### AARON A. FERRIS, Assignee, W. H. CARRUTHERS, Trustee,

of the Riverside Rolling Mill Company,

Cincinnati, Ohio.

Cincinnati, Onto.

FOR SALE.—NUT AND BOLT MACHINERY—
By the National Machinery Co., of Cleveland,
O.—The only specialists in this line in the U. S.
Two new Hot-pressed Nut Machines, small sizes.
Two new Hot-pressed Nut Machines, small sizes.
Two new Hot-pressed Nut Machines, small sizes.
Three second-hand Hot-hammered Nut Machines.
One 2d-hand Burdick Rivet and Heading Machine.
Six new Chapin Headers, for carriage and small work.
Bolt Cutters, second hand—we have 12 of different makes, Wiley & Russell, Mayo, Merriman, &c. Three new small National Bolt Cutters.
Six new No. 4 National Bolt Cutters, cut to 124.
Two new No. 5 National Bolt Cutters, cut to 245.
Two new No. 6 National Bolt Cutters, cut to 246.
Two new No. 6 National Bolt Cutters, The National Head and Case Die on these. We guarantee, place them ahead of anything offered in the market. Three new Single Rapid Bolt Cutters.
Four new Double Hapid Bolt Cutters, suitable for bolt shops, &c. We manufacture complete outflist for bolt and nut shops, including such tools as Cam Headers, Upsetters (cold and hot), Bolt Pointers, Head Shavers, Nut Burrers, Tire blank machy, &c.

## ON HAND AND FOR SALE.

ON HAND AND FOR SALE.

Horizontal Boiler, 42 in. x 10 ft., 28 4-in. tubes, 36 shell, 7-is heads.

Horizontal Boiler, 42 in. x 10 ft., 90 2-in. tubes, 5-16 shell, 36 heads.

Vertical Boilers, with Bases, Grates and Fixtures: 42 in. x 7 ft., 90 2-in. tubes, shell and fire-box 36 in., heads 36 in. New.

36 in. x 6 ft., 80 2-in. tubes, shell and fire-box 5-16 in. heads 5-16 in. Rebuilt.

30 in. x 6 ft., 52 2-in. tubes, shell and fire-box 5-16 in. heads 5-16 in. New.

30 in. x 6 ft., 52 2-in. tubes, shell and fire-box 5-16 in. heads 5-16 in. Second hand.

15 x 36 Horizontal Engine, 9 ft. x 18 in. band wheel. Jacob Naylor.

12 x 24 Horizontal Engine, 9 ft. x 18 in. band wheel. 3 in. tubes 12 x 24 Horizontal Engine, 50 mm wheel 4500 lbs. James Moore.

13 x 12 Vertical Engine, band wheel 2 in. x 10 in. A. G. BROOKS & WINEBEENER,

16 in North Third St., Philadelphia.

#### For Sale.

7 x 10 DOUBLE ENGINE, Link tio . uitable for Mine, Furnace or Quarry hoisting, Been used one week only,

A. G. BROOKS & WINEBRENER. 261 N. 3d St., Philadelphia.

#### For Sale.

To close an estate. The MACHINERY, FURNACES, TOOLS, &c., of a Plate and Sheet Mill complete. Terms, one-third cash, balance long time if wanted. Address
THOS. B. McKILLIP,
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#### For Sale.

An old and well-established Hardware Business in a live town of 5000 inhabitants, in Southern Michigan. Stock in good condition. Will invoice about \$10,000. A rare chance for an active man to secure a good business. Address, E. D. & T.. Office of The Iron Age, 83 Reade St., New York

#### For Sale.

Rolling Mill, favorably located in the State of New York; has been used for making merchant iron and railroad fastenings. This mill is in com plete working order.

H. C. BRIGGS, 71 Rutgers alip, N. Y.

#### Locomotives for Sale.

Four Locomotives, 4 ft. 8½ in. gauge, built by Baldwin Locomotive Works for passenger service. Cylinders, 14x24; diameter of drivers, 58 in.; fuel, bituminous coal. All in good running or ler. W. S. WILSON

227 South 4th st., Philadelphia

A THOROUGHLY PRACTICAL AND ABLE Manager of Blast Furoaces desires a position. Understands management of furnaces and ma-chinery from top to bottom. Best references as to character and ability.
Address, P. O. Box 3612, New York.

#### Sanderson Bros. Steel Co. A limited number of shares for sale by EDWARD FRITH & SON, 241 Pearl street, New York.

#### Special Notices.

#### For Sale. Second-Hand Machinery CHEAP.

## YORK & SMITH, Cleveland, Ohio.

FOUNDRY AND MACHINE SHOP. Estab lished 1842. Well stocked with Patterns and lous. Business good. Satisfactory reasons for ness good. Satisfactory reasons for ress A. L. VAIL, selling. Address Middletown, N. Y.

For Sale.

#### For Sale.

One pair CHILL ROLLS, 25 inches diameter, o inches long; necks, 16 inches diameter, 13½ aches long; wabbier, 14 inches diameter, 7½ toches long. nches long. Cne pair PINIONS, 25 inches diameter, 30 inches o outside of shrouds; necks and wabblers same

as on chill rolls.

Six COUPLING BOXES, for above rolls and pinions.
One POPPET VALVE ENGINE, so inch bore, 6-foot stroke, with cast-iron fly-wheel in eight sections, 16-feet diameter; rim of wheel, 11 x 12 in. Engine is now in position at our mill.

Engine is now in position at our mill.

BRITTON IRON & STEEL CO.,

Cleveland, Ohio.

#### For Sale.

Hardware Business of 20 years' standing. Stock will invoice about \$10,000. Fresh and in good con dition. To a party with the money this is an op portunity that seldom offers.

For particulars inquire of JOHN BINDLEY,

186 Federal street, Allegheny City, Pa.

#### For Sale.

Stock of hardware, stoves and implements, and tore furniture, in one of the best towns in Kansas. HARDWARE,

Box 366, Salina, Kansas

#### For Sale.

HARDWARE.-The controlling interest or the whole of a Jobbing Hardware House, already established and doing a profitable business; located in one of the large Western cities. For further particulars, address C. A., Office of The Iron Age, 83 Reade St., New York.

#### For Sale.

LARGE SLOTTER, 6 ft, between Columns, 4-ft Table, stroke 18 in., ind. cross and circular move menta. A heavy, well-built tool; in first-rate or-der; will be sold low. Photo. on application. A. G. BROOKS & WINEBRENER, 61 N. Third street. Philadelphia

#### FOR SALE.

Job Lots and Bankrupt Stocks Hardware. Great bargains offered to the trade.

A. W. WHEELER,

#### 141 Lake St., Chicago, Ill.

## Desk Room To Let. At 110 Chambers St., New York, on

the ground floor. W. C. HARLOW.

VALUABLE WATER FRONT ON EAST RIVER, Between Eighth & Twenty-third Sts., FOR SALE.

Suitable for iron works or manufacturers, where arge water facilities are required. About 50 lots, accluding land under water. CHAS. S. BROWN, 77 Liberty St., N. Y.

One-Thousand-Pound

#### STEAM HAMMER FOR SALE.

In good order, and can be seen at our works
WOOD, SMITH & CO., Fort Plain, N. Y.

#### Chilian Mill for Sale.

One Double Chaser Chilian Mill, complete with gearing for driving it. Suitable for grinding ores, fire-brick, cinders, &c.

Skatch with measurements on application.

A. G. BROOKS & WINEBRENER, 261 N. 3d st., Philadelphia

#### Notice.

To Manufacturers of Farming Tools.

I want a party to manufacture a NUMBER ONE
HAY KNIFE on Royalty, or will sell the patent
on reasonable terms. Address.

A. ZIMMERER,
Care Bischof & Zimmerer, Hardware,
Nebraska City, Neb.

#### Special Notices.

#### BISSELL & WELLES, Auctioneers,

SPRING TRADE SALE

Hardware, House Furnishing Goods, Enameled and Tinned Ware, Table Cutlery, Pocket Cutlery, &c.,

#### ON FEBRUARY 16, 17 and 18, At 83 Chambers and 65 Reade Sts.

At 83 Chambers and 65 Reade Sts.

This sale will comprise large lines of Hardware, Edge Tools. Flies, House Furnishing Goods, Brushes, Shovels, Tinned and Enameled Ware, &c. Also, by order of the New England Butt Co., about 20,000 dozen Broad and Narrow Cast Butts, assorted common and wired, good sizes. Specifications of sizes will be sent to parties desiring them.

Also, by order of the Cutlery Association, first sale this year of American seconds, comprising about 20,000 dozen Table Knives and Forks, a large line of Carvers, Butcher Knives, &c. Also, a large line of Pocket Cutlery, Silver-plated Knives and Forks, Spoons, &c.

Additional particulars will be given in next week's issue. Those who desire to contribute to this sale will please send in their invoices at as early a date as possible.

Philadelphia, Jan. 1, 1881.

PHILADELPHIA, Jan. 1, 1881.

The undersigned, the last representative of the firm of J. BARTON SMITH & CO., established in 1843, finding it no longer possible to alone give proper attention to the increased demand for its celebrated brand of Files and Rasps, has transferred the business to the J. BARTON SMITH COMPANY. Thanking the trade for its liberal patronage in the past he respectfully solicits a continuance of the same for the new firm. CHARLES F. CRIPPS.

CHARLES F. CRIPPS.

Office and Works of the J. Barron Smith Co., Nos. 211, 212, 217 New Street,
Philadelphia, Jan. 1, 1881.

Referring to the above, the undersigned beg to assure the trade that they will faithfully preserve in the future the high reputation of the well-known goods of the late firm of J. Barron Smith & Co., and with largely increased facilities will be able to promptly fill all orders they may be favored with. In addition to the line of Files and Rasps, they will also manufacture a full line of Wood Saws, Butchers' Saws, &c., of equal merit to the best made, soliciting the favors of the trade at lowest market rates. Respectfully,
CHARLES F. CRIPPS, President.
GILBERT PARKER, Treas, and Genl. Agt.
New York Branch, No. 128 Chambers street,
Wm. H. Bramhall, Manager, P. O. Box 2813.

#### For Sale.

A large manufacturing establishment, consist ing of Machine Shop, Foundry, Boiler Shop, Paint Inspector of Steel and Iron Rails, Shop and Store House. Good brick buildings, fully equipped with necessary machinery, a'l in first-class condition. Lot 19 rods long and 12 rods wide. A switch from the Erie Railway runs directly to the zhop, and the New York Central Railroad is but a few rods distant. The railroad accommodations for shipping are unsurpassed. The shop has been doing a very large busines: in the way of repairs. No other machine shop nearer than Buffalo or Rochester. Located at Batavia, half way between Buffalo and Rochester. The preperty can be bought upon reasonable terms.

Call upon or address,
R. B. PEASE, Batavia, N. Y.

#### SECOND-HAND DROP PRESSES Agent for the Champion and Standard Knox

BOUGHT, SOLD & EXCHANGED

BEECHER & PECK,

#### Lock Box 128, New Haven, Con-To Manufacturers and Hardware Merchants.

#### WANTED.

By a man of experience in positions of trust, who has a knowledge of the requirements of the export trade in American Hardware, having resided and traveled abroad for business, also held for several years past a responsible, position in a manufactory, a new engagement as office man or travel to solicit trade and establish connections in foreign countries.

Middletown, Conn.

State Planer Iron.

Size of Bed 12 ft. x 4 ft.; price with countershaft, \$500. Also 10,000 ft. 3 in. and other sizes Wrought Iron Steam Pipe; 2000 ft. 6-in. Cast-Iron Heating Pipe. For sale by

oreign countries.

Address, ENTERPRISE,
Office of The Iron Age, 83 Reade Street, N. Y.

Office of The Iron Age, 33 Reade Street, N. Y.

WANTED.
In a Western city, a general superintendent for an Agricultural Implement Factory, embracing Wood, Machine and Blacksmith Shops, Foundry and Pattern Shop, now running and working 59 to 75 men. A thoroughly compe ent and experienced man can have a permanent situation with or without an interest, as he might desire. State fully terms, locality and character of experience, age, and reference as to character and ability.

Address, FARM MACHINERY CO., Office of The Iron Age, No. 83 Reade St., N. Y.

#### Wanted.

By a young man connected with a first-class Retail hardware House for the last 18 years (at present first salesman) to represent one or more responsible manufacturers in a large Western city. First-class references given.

Office of The Iron Age, 83 Reade St., New York.

#### Wanted.

TO PURCHASE 8 or 10 NAIL MACHINES. Please address, stating size, condition and price, NAILER,

Care of Jos. D. Weeks,

Office of The Iron Age, 77 4th Ave., Pittsburgh, Pa.

#### Wanted.

Position in an iron works by a party of 25 years' experience, having served as superintendent and finally as president in a well-known rolling mill. Can refer to business firms of highest standing. Does not expect more than fair compensation.

T. C. C.

Louisville Rolling Mill Co.,
Louisville, Ky.

#### Wanted.

A person familiar with the outside work connected with a Coke Furnace in the country, such as understanding the management of ore and coal mines, surveying them, and hiring as well as directing general labor, &c. Best of references required. Address P. O. BOX 32, Philadelphia, Pa.

Philadelphia, Pa.

Notice to Foundrymen.—An experienced foreman, a bench and machine molder of 16 years' experience at the trade, would like to hear of some responsible manufacturer in regard to a situation as foreman or superintendent in a foundry. Good reference can be given.

Address,

No. 363 West 3d st., Cincinnati, Ohio.

Secretary of the Iron and Steel Institute.

Sectedary of the Iron and Steel Institute.

Section I. History of Steel; Chap. 1. History of Steel; 2. Early History of Steel; 2. Early History of Bessemer Process; 5. Siemeni-Martin Process; 6. Other Steel-making Processes; 7. Steel in America; 8. Germany; 9. Frânce; 10. Austria; 11. Russia; 12. Sweden; 13. Other Countries.—Section II. Masafacture of Steel; Chap. 14. Cementation and other Methods; 15. Manufacture by Bessemer Process; 16. Siemeni-Martin Process; 17. Other Methods.—Section III. Chemical and Physical Properties of Steel; 20. Elison in Steel; 21. Sulphur in Steel; 22. Sillion in Steel; 22. Tensile Strength of Steel; 24. Mechanical Tests of Steel application; of Steel and Marking Steel; 25. Tensile Strength of Steel; 24. Mechanical Tests of Steel application; of Steel and Steel and Steel; 25. To Shipbuilding; 36. To Bridge Building; 29. To General Purposes; 30. Guns and Armor Plates; 31. Other Purposes; 30. Guns and Armor Plates; 31. Other Purposes; 30. Steel. Proc Sale by

DAVID WILLIAMS,

#### Special Notices.

Large Stock of New and Second-Hand

# MACHINERY.

Three pair Scales, weigh to 3500 lbs. Fairbanks, One Horizontal Corliss Engine, 200 h. p. One Delamater Sugar-house Engine, 36 in. x48 in. One Horizontal Engine, 15½ in. x30 in. Todd & Raferty.

One Horizontal Engine, 9 in. x 12 in. Erie Iron Works, Five Horizontal Engines, 9 in. x 12 in. [Gray One Horizontal Engine, 3 in. x2 in. [Gray One Horizontal Engine, 3 in. x2 in. [Gray One Horizontal Engine, 5 horse power Two Horizontal Engine, 5 horse power Two Horizontal Engine, 5 in. x4 in. 0 ho. each. One Hor. Tubular Boller, 6 ft x14 ft. 50 4 in. tubes. Two Hor. Tub. Bollers, 5 ft. x14 ft., 50 4 in. tubes. Two Hor. Tub. Bollers, 5 ft. x14 ft., 50 4 in. tubes. Two Hor. Tub. Bollers, 5 ft. x15 ft., 43 4 in. tubes. One Steel Locomotive Boller, 2 ft. x ft., 2 4 4 in. tubes. One Steel Locomotive Boller, 2 ft. X TOOLS.

#### MACHINISTS' TOOLS.

MACHINISTS' TOOLS.

One Lathe, 25 in. swing 16 ft. bed.
One Lathe, 15 in. swing 16 ft. bed.
One Milling Machine.
Two Hydraulic Presses, 8-in. ram, in perfect order.
One Planer, 22 in. 25 ft. bed.
One Planer, 22 in. 25 ft. bed.
One New Haven Drill.
Will bore in center of 60 in.
Two Ensley Drills.
One Vertical Boring Mill, bore from 26 to 90 inches.
One Turn Table and Boring Mill, 11 feet between
One Turn's Boring Mill, bore from 26 to 90 inches.
One Merrill Compressed Air Hammer, Hotchkias
One Upright Drill, to the center of 64 in. [Patents, One 16 ft. 16 f

One Guild & Garrison Pump, No. 3. Six Hardick Fumps, from No. o to No. 4. New. One Woodward Pump, No. 1. 7900 lbs. ¼ Plate Iron, for safes. Two Bliss & Williams Presses. A full line of Woodward Steam and Fire Pumps. One hand-power Paper Cutter.

#### J. GRAY'S MACHINERY DEPOT. 37 Dey Street, New York, U. S. A.

To Railroad Engineers, Importers and Others.

DAVID OWEN. Merthyr Tydfil, England,

Undertakes the inspection of Steel and Iron Rails, Permanent Way Materials, &c., &c., in England, Belgium and Germany. Thoroughly practical, of many years' experience. Can give vory best of references from chief railroad engineers, merchants and others who have employed me to inspect their railroad materials during manufacture and delivery for the last to years. Correspondence solicited. Instructions by mail or cable punctually attended to.

#### L. SALOMON,

Importer of and dealer in Upholsterers' Needles, Gilt Nails and Housefurnishing Hardware.

No. 10 Murray St., New York. THOSE WISHING TO BUY OR HAVE FOR

#### SALE SECOND-HAND

PRESSES or DROP HAMMERS will please communicate with

N. C. STILES, Middletown, Conn.

A. PURVES & SON, South and Penn Sts., Phila.

# Europe.

## Matheson & Grant's

Address is

32 Walbrook, London, England.

Engineers and Commission Agents for all busiss relating to engineering and metals in Europe. Telegraph address.

### MATHESON, WALBROOK, LONDON.

The Sherman Process Co. 9 Pemberton Square, Boston, Mass., Issue Licenses to use the Process for the Manufacture of Iron and Steel

In the Bessemer Converter, Crucible, Siemens-Martin, Puddling, Blast and Cupola Furnaces, The use of this Process improves the quality of the product, saves fuel and labor, and does not re-quire any change in furnace or manner of working See page 17 of The Iron Age of Oct. 25th, 1877.

#### STEEL:

Its History, Manufacture, Properties, and Uses. By J. S. JEANS,

For Bale by 83 Reade St., New York,

# Trade Report.

Office of THE IRON AGE, 1 WEDNESDAY EVENING, January 26, 1881.

During the past week the financial markets have been active. The leading drawers of sterling exchange advanced their rates, which were subsequently reduced in part, making the closing quotation 98% and 991/2 for sixty-day and demand bills respectively. The ruling rates to borrowers on call have been 5 @ 6%, but loans were made as low as 3 %.

The importations of specie and bullion at this port during the week ending January 21, were \$2,665,341, consisting of \$2,576,165, in gold and \$143,952 in silver, as against a total of \$205,951 for the week ending January 24 last year. The importations since th 1st of January and since the 1st of August compare as follows with the movement dur ing the corresponding periods last year :

| Gold       |               | 1885.<br>\$530,692<br>169,304         |
|------------|---------------|---------------------------------------|
| Total      | \$2,959,323   | \$699,996                             |
| GoldSilver | 1880-81.      | 1879-80.<br>\$75.558,664<br>3,146,828 |
| Total      | .\$73,541,442 | \$78,705,482                          |

Early in the week United States bonds were strong, but later the 4s and 41/2s declined 1/4. State bonds were quiet and Railroad bonds irregular, but in the main strong, and prices advanced 1/4 @ 101/ %. We give below the closing quotations of governments.

The general stock market was alternately strong and heavy until near the close on Monday, when prices showed an advance of 14 @ 71/2 %. On Tuesday the market fell off 34 @ 4%. The principal dealings were in Erie, Northwest, Milwaukee and St. Paul, Western Union, Pacific Mail, Wabash, and the coal stocks. We give below the closing quotations of active stocks.

The bank statement makes the following comparison of aggregate averages for the past two weeks:

|              | January 15. | January 22.   | Con  | parison.  |
|--------------|-------------|---------------|------|-----------|
| Loans        |             | \$307,839,600 |      |           |
| Specie       | 65,462,500  | 66,484,100    |      | 1,021,600 |
| Legal t'd'rs | 18,586,100  | 16,395,600    | Inc. | 709,500   |
| Tot. reserve | 81,148,600  | 82,879,700    | Inc. | 1,731,100 |
| Deposits     | 292,376,800 | 298,931,900   | Inca | 6,555,100 |
| Reserve re-  |             |               |      |           |
| quired       |             | 74.732,975    | Inc. | 1,638,775 |
| Surplus      |             | 8,146,725     | Inc. | 92,325    |
| Circulation. | 18,425,000  | 18,345,500    | Dec. | 79,500    |
|              | TWPORTS A   | T NEW YORK    |      |           |

For the week ended January 22:

| Total for week<br>Prev. reported. | 1879.<br>\$4,951,401<br>6,496,314 | 1880.<br>\$11,068,634<br>13,000,325 | x881.<br>\$6,225,432<br>x6,287,536 |
|-----------------------------------|-----------------------------------|-------------------------------------|------------------------------------|
| Since Jan. r                      |                                   |                                     | \$22,512,968                       |

ncluded in the imports of general mer chandise for the week were articles valued

| ten Tomo                      |           |         |
|-------------------------------|-----------|---------|
|                               | Quantity. | Value.  |
| Anvils                        | 352       | \$4.015 |
| Brass goods                   | 18        | 2,117   |
| Bronzes                       | 2         | 27      |
| Chains and anchors            | 57        | 1,375   |
| Copper                        |           | 593     |
| Cutlery                       | 95        | 23,160  |
| Pins                          | 5         | 340     |
| Gas fixtures                  | x         | 732     |
| Guns                          | 73        | 14,169  |
| Hardware                      | 44        | 2,100   |
| Iron, pig, tons               | 5,124     | 101,286 |
| Iron, sheet, tons             | 31        | 1,203   |
| Iron ore, tons                | 3.514     | 12,390  |
| Iron, other, tons             | z,680     | 45,232  |
| Metal goods                   | 197       | 22,557  |
| Nails                         | - 6       | 933     |
| Needles                       | 18        | 6,292   |
| Nickel                        | 8         | 3,439   |
| Old metal                     |           | 2,270   |
| Platina                       | 3         | 14,687  |
| Plated ware                   | 3         | 677     |
| Saddlery                      | 4         | 624     |
| Steel                         | 14,033    | 66,120  |
| Silverware                    | 8         | 352     |
| Tin, boxes                    | 29,620    | 110,233 |
| Tin, 1,812 slabs; 156,695 lbs |           | 32,462  |
| Wire                          | 71        | 3,618   |
| Zinc                          | 68,875    | 2,574   |
| EXPORTS, EXCLUSIVE OF         | SPECIE.   | -1214   |
|                               |           |         |

For the week ended January 25 .

| For the week<br>Prev. reported. | 1879.<br>\$5,950,349<br>8,676,955 | 1880.<br>\$6,744,879<br>10,685,980 | 1881.<br>\$7,140,084<br>13,252,797 |
|---------------------------------|-----------------------------------|------------------------------------|------------------------------------|
| Since Jan. 1                    | \$14,627,304                      | \$17,430,859                       | \$20,392,881                       |
| H:                              | KPORTS OF                         | SPECIE.                            |                                    |

For week ended January 22: Total since January 1, 1881 ..... 2,795,321

Government bonds at the close were quoted as follows: U. S. 6's 1881 registered.... 8. 6's 1881 coupon. 1015/ 8. 6's 1881 coupon. 1015/ 8. 5's 1881 registered. 1005/ 8. 4's 1881 coupon. 1015/ 8. 4's 1891 registered. 1124/ 8. 4's 1891 coupon. 1124/ 8. 4's 1907 registered. 1124/ 8. 4's 1907 coupon. 1125/ 8. Currency 68 1895...

| U. S. Curr  | SHCA OR ! | LOQUIARRESERVERENTES | -         |
|-------------|-----------|----------------------|-----------|
| U. S. Curr  | ency 6s I | 897 130              | -         |
|             |           | 898                  | -         |
|             |           | 800 130              | -         |
| The fol     | lowing    | were the closing qu  | uotations |
| of active   | shares :  |                      |           |
|             |           | Bid.                 | Asked.    |
| American    | District  | Telegraph 6134       | 613/4     |
|             |           | Telegraph 46%        | 47        |
| Alton and   | Terre H   | laute 43             | 44        |
| 6.6         | 66 66     | Pref121              | 1231/2    |
| American    | Union Te  | elegraph 82          | 83        |
| Arizona     |           | 434                  | 5         |
| Burlington  | and Qu    | incy                 | 172<br>87 |
| Canada So   | uthern    | 863/4                | 87        |
| C. C. G. an | d I       | 891/2                | 90        |
| C. C. and I | . C       | 2351                 | 23%       |
|             |           | 911/4                | 911/2     |
|             |           | New Orleans 55       | 57        |
| Chesapeak   | e and O   | hio 2334             | 231/2     |
| 4.6         | 46        | 1st Pref 331/2       | 35        |
| 66          | 6.6       | 2d Pref 24%          | 25        |
| Colorado (  | oal and   | Iron 39              | 40        |
| Keokuk an   | d Des Mo  | oines 20             | 21        |
| 6.6         | 6.6       | Prof. 50             | 62        |

| Little Pittsburgh 23/4 Louisville, New Albany and Chic 76 Morris and Essex 122/4 Michigan Central 122/4 Macrocolitan Elevated 122/4 | 3<br>77   |
|---|---|
| Michigan Central  | 1231/4  |
| Metropolitan Elevated   | 100   |
| Manhattan Elevated 3559 Marietta and Cincinnati Pref. 1234 Mobile and Ohio 2356   | 35%   |
| Marietta and Cincinnati Pref 1234   | 13  |
| " " 2d Pref 734   | 81/2  |
| Mobile and Ohio 2358  | 233/4   |
| New Jersey Central 92%  | 923/4   |
| Northwest   | 13114   |
| Pref 141  | 1411/4  |
| New York Central151   | 1511/4  |
| New York Elevated12416  | 125   |
| Northern Pacific 3378   | 34  |
| " Pref 651/4  | 651/2   |
| Nash, and Chattanooga 67  | 68  |
| New Central Coal 28   | 29  |
| Omaha 4958  | 49/8  |
| " Pref  | 10734   |
| Ohio and Mississippi  | 43 <sup>1</sup> / <sub>4</sub><br>106 <sup>3</sup> / <sub>4</sub> |
| Pret  | 100%  |
| Ohio Central 32   | 321/8   |
| Untario and Western 30%   | 38 78   |
| Ontario Silver 33½  | 341/2   |
| Oregon Navigation   | 383%  |
| Peorla, Decatur & Evansville 35%  | 531/4   |
| Parame Mail   | 228   |
| Panama226   | 16  |
| Quicksilver 12 Pref 56  | 57  |
| Rome, Watertown & Og 37   | 28  |
| Reading   | 6134  |
| Rock Island   | 1385%   |
| St. Paul  | 1101/2  |
| " Pref 126  | 127   |
| St. Louis & San Francisco   | 4752  |
| " " Pref 66   | 681/2   |
| " " ist Prefioi   | 101/2   |
| St. Paul and Minn 88  | 891/2   |
| Silver Cliff 41/4   | 4 1/2   |
| Texas Pacific 45%   | 46  |
| Union Pacific   | 1201/4  |
| Wabash 48   | 481/4   |
| " Pref  | 91  |
| Standard 22%  | 11514   |
| Stormont  | 23  |
| Sutro Tunnel.   | 136   |
| Delaware & Hudson Canal1073   | 10756   |
| Delaware, Lack, and Western 123%  | 124   |
| Denver and Rio Grande 911/8   | 03  |
| Express-Adams128  | 130   |
| " Wells, Fargo  | 121   |
| " United States 5634  | 5734  |
| " American 67   | 671/2   |
| Erie and Western 551/2  | 5534  |
| Erie 50%  | 5034  |
| " Pref. 93¼ Hannibal and St. Joseph. 55% " Pref. 108  | 9334  |
| Hannibal and St. Joseph 55%   | 56  |
|   | 1081/4  |
| Houston and Texas 69  | 72  |
| Iron mountain   | 611/4   |
| Iron Mountain       61½         Illinois Central       131½         Indiana, Bloom. and Western       68                            | 1311/2  |
|   | 70  |
| MINING STOCKS.  |   |

The mining exchanges are very active today and transactions are large, but prices

show no material change from yesterday.

| 7                     |      | osing |
|-----------------------|------|-------|
|                       |      | Aske  |
| Amie                  | 48   | -     |
| Alta Mont             | 1.85 | 2.4   |
| American Flag         | 23   |       |
| Bell Isle             | 60   |       |
| Bechtel               | 85   |       |
| Bonanza C             | 30   |       |
| Buckeye               | 23   | 1     |
| Bull Dom              |      | 3-    |
| Bulwer                | 1.70 | I.    |
| Bodie                 | 5.75 | 6.    |
| Boulder               | 60   | - 1   |
| Calaveras             | 21   | 1     |
| Cale. B. H            | 55   | 1     |
| California            | 1.25 | I.    |
| Climax                | 49   |       |
| Consolidated Virginia | 2.05 | 2.    |
| Consolidated Imperial |      |       |
| Consolidated Pacific  | 1.00 | E.    |
| Chrysolite            |      | 6     |
| Cherokee              | 1.90 | T.    |
| Dahlonega             | 9    | 1     |
| Dunkin                | 1.40 | 1.    |
| Eureka C              |      | 21.0  |
| Findley               | 27   | - 3   |
| Gold Placer           | 47   |       |
| Green Mountain        | 6,00 |       |
| Hukill                | 1.45 | E.    |
| Horn Silver           | 1214 | 13    |
| Independence          | 40   | 4     |
| Lacrosse              | -    | 3     |
| Lucerne               | 10   | 1     |
| L. Chief Mariposa     | 1.10 | 2.0   |
| Moose                 | 1.95 | * 1.8 |
| Maybelle              | 34   | 2.0   |
| Navajo                | 34   | 2.4   |
| N. Y. & C             | -    | 2.4   |
| North Stan            |      | 5     |
| Red Eleph             | 30   | 3     |
| Rappah k              | 14   | 1     |
| S. B die              | 27   |       |
| S. Hite               | 55   |       |
| S. Bulwer             | 47   | 5     |
| Silver Cliff          | 4.30 | 4.3   |
|                       |      |       |

#### GENERAL HARDWARE.

more active but for the continued embargo The goods are illustrated in their advertiseon transportation, due to the quantity of ice in our streets and rivers. The orders attention. They are offered to the trade at received from travelers are said to be numer- discount 60 per cent. from the following ous and satisfactory, considering the season, list: couraging.

The demand for foreign Hardware is said and unchanged.

The Nail market is very quiet at present, and we do not hear of any large orders being placed. We quote 10d to 60d, \$2 90 @ \$3, net, according to quantity.

We received by telegraph, from our Chicago office to-day, some particulars regarding the licenses being issued by the Washburn & Moen Manufacturing Company, to manufacture Barbed Fence Wire under the patents owned by them, which will be found in our Chicago correspondence in another

The File manufacturers held a meeting at the St. Nicholas Hotel, in this city, on the 20th instant, at which the following estab lishments were represented: Western File Co., Nicholson File Co., Henry Disston & S. P. Bowen, president and treasurer; Her-Sons File Co. (Limited), New American File man Veeder, vice-president; W. S. Guibord. Co., Madden & Cockayne File Co., Heller & Bros., Clarke & Draper, G. & H. Barnett and the Hiscox File Mfg. Co.

An association was formed under the style of File Manufacturers' Union Association, and the following officers were elected Hon. E. M. Madden, president; James M. Fessenden, vice president; Oscar N. Kyle, secretary and treasurer, and Samuel Disston, Wm. T. Nicholson and Oscar N. Kyle, executive committee. Committees for the revision of price lists and standard sizes for list, with some additions of new goods. This File Steel were appointed to report at a list, which we print below, is subject to disfuture meeting, to be called at an early day. No definite action regarding prices was arrived at, and in the unsettled condition of the business we have omitted the quotations of the members of the association : the makers named above in our table of 'New York Wholesale Prices" on another

The manufacturers of Clothes Wringers

held a meeting in this city to-day and adjourned to meet again to-morrow. Prices of these goods are unsettled and irregular.

The meeting of manufacturers of Strap and T Hinges, mention of which appeared in our last issue, adjourned without taking any action in regard to price; the goods are quoted in this market at discount 60 and 10 per cent.

The manufacturers of Wrought Butts held a meeting on the 21st instant, when the following revised discounts were adopted, to take effect from date.

| to stante execu- |                 | CALGOLI      |              |
|------------------|-----------------|--------------|--------------|
|                  | WROL            | GHT BUTTS.   | -            |
|                  |                 |              | Dis. per oc  |
| Loose Pin        |                 | ****** ***** |              |
| Loose Joint      | *******         |              | ( 55         |
| Narrow           | × * * * * * * * | ***** * **** |              |
| Light Narrow.    |                 |              |              |
| Light Blind      |                 |              |              |
| Table            |                 |              |              |
| Back Flaps       |                 |              | 500          |
| Inside Blind     |                 |              |              |
| Broad F. J       |                 |              |              |
| Chest Hinges.    |                 |              |              |
|                  |                 |              |              |
| We have r        | eceive.         | d the follow | wing circula |

Springfield, Mass., January 24, 1881. P. O. Address, Brightwood. To the Trade: The Genuine Stebbins Molasses Gates can now be purchased direct

of the manufacturers, and we shall not be undersold. Our prices are guaranteed.

Very respectfully,

E. Stebbins Mfg. Co.

PHILADELPHIA, January 10, 1881. New York, January 10, 1881. To the Hardware Trade.—The new illus-

trated price list of the Pennsylvania Lawn Mower will be ready for distribution Jan-The discount on the reduced list prices for 1881. The discount on the reduced list to the Hardware Trade will be 30 per cent. Lawn Mowers shipped during the month of February and March will date from April 1st. Soliciting your orders, we are yours truly.

LLOYD, SUPPLEE & WALTON,

Philadelphia. DURRIE & McCarty, New York.

Notice is hereby given that the partnership heretofore existing between the undersigned, under the firm name of A. H. McNeal & Bro., is dissolved by mutual consent. The unsettled business of the firm will be adjusted by A. H. McNeal, who will continue the business. A. H. McNeal, W. E. McNeal.

Burlington, N. J., Jan. 19, 1881.

Johnson & Bro., File manufacturers, was destroyed by fire, excepting our Grinding and Forging Department, which remains intact; this will enable us to fill orders, without any delay. We shall enlarge our

which they have recently added to their assortment. These Hinges will commend

Mfg. Co., Medina, N. Y., invite the attention of the trade to the U. S. Wood Track

Medium, per doz ... \$12,38 14.63

Ex. heavy ... 14.03 16.80

Ex. heavy ... 14.03 16.80 Business is fair, and would doubtless be Barn Door Hangings manufactured by them.

to be light, but it is too early in the season Mass., and Nos. 84 and 86 Chambers street, to early in the season to expect much activity. Prices are firm and unchanged.

New York, have issued their 1881 catalogue Plain, per doz....\$1.50 1.65 1.85 2.03 and unchanged. assortment of Tailors' Shears, Straight and Bent Trimmers, Pocket and Ladies' Scissors, Tailors' Points, Pruning Shears, Tinners' Snips and Solid Cast Steel Sheep Shears. In Samps and Solid Cast Steel Sheep Shears. In an advertisement on the tenth page they illustrate their "Diamond Edge Solid Cast Pierced. 1.65 1.80 1.85 2.03 1.88 2.10 1.95 Nos. 22 24 26 Steel Sheep Shears," for which they claim Steel Sheep Shears," for which they claim Plain, per doz. \$2.03 2.18 2.40 2.63 2.85 great superiority, and to which we invite Picreed..... 2.10 2.25 2.48 2.70 2.93 attention.

At the annual meeting of the stockholders of the Saranac Horse Nail Company, Plattsburgh, N. Y., held January 22, 1881, the following directors were elected for the ensuing year : S. P. Bowen, Herman Veeder, J. M. Wever, J. H. Signor, Joseph Payette. The officers elected for the ensuing year are secretary.

The firm of Coulter, Flagler & Co. has Per doz .. under the style of Flagler, Forsyth & Bradley, who will continue the business of Hardware Manufacturers' Agents, at the old Per doz stand, Nos. 87 Chambers and 69 Reade

streets. The manufacturers of Tinware have formed an association on the pooling plan, and have adopted the January, 1880, price count 50 per cent., in a small way, and to the large trade a discount of 50 and 10 per cent. is allowed. The following is a list of

> LALANCE & GROSJEAN MFG. Co., United States Stamping Co., James, Aikman & Co., E. KETCHAM & Co.,

ST. LOUIS STAMPING CO., F. HABERMAN. SIDNEY SHEPARD & Co., DOVER STAMPING CO., ADAMS & WESTLAKE MFG. CO., BARON MFG. Co., IRON CLAD MFG. Co., STANDARD TIN WARE CO., WILLIAM VOGEL, C. B. PORTER & Co.. KEEN & HAGERTY, GEORGE BOOTH & Co., BENHAM & STOUTENBOROUGH, MATTHAI, INGRAM & Co., J. HALL ROHRMAN & SON. Manual List, January 10, 1880, as Corrected January, 1881. DEEP STAMPED WARE. Biscuit Pans, Retinned. Nos..... 5 10 15 20 Per doz......\$2.25 2.55 2.93 3.38 Nos..... 31 32 33 34 35 Per doz..\$1.58 2.40 2.70 3.38 3.75 Cake Pans, Tubed, Retinned. Nos..... 7 8 9 10 11 Per doz... \$1.13 1.20 1.35 1.58 1.80 Nos..... 08 00 010 011 Per doz... \$1.13 1.28 1.42 1.65 Nos..... 14 15 16 Per doz... \$1.28 1.42 1.65 Corn Cake Pans, Retinned. Cup Dippers, Retinned.

Nos ... 8 9 10 11 12
Per doz. \$1.80 2.03 225 2.48 2.70
Nos ... 14 15 16 17 18
Per doz. \$1.80 2.03 2.25 2.48 2.70
Nos ... 20 21 22 23 24
Nos ... 20 21 22 24 26
Nos ... 20 22 24 2 Johnson & Bro., File manufacturers, Newark, N. J., have issued a card to the trade, under date of the 20th instant, in which they say: "This a. m. our works was destroyed by fire, excepting our Grind-Dippers, Flaring, Flat Handle, Retinned.

Dippers, Flaring, Flat Handle, Retinned. Dippers, Plain.

Pin'ts... ½ ¼ 1 1½ Quarts.. 1 2 2½
Per doz.\$0.90 1.05 1.13 1.28 Per doz.\$1.42 1.73 2.03

Gravy Strainers, Retinned. Gravy Strainers, Retinned. Nos......19 36 37 38 Per doz......\$2.93 1.88 2.10 2.40 Ladles, Iron Handles, Retinned. Ladles, Patent Threaded Handles, Retinned. Ladles, Wood Handles, Retinned. Ladles, Soup, Wood Handles, Retinned.

Per doz. 38
Per doz. \$1.50
Ladles, Pump, Retinned. Ladles, Oyster, Plain, Retinned. Molds, Tubed Cake, Retinned. .....\$3.45 53 .....\$3.45 Molds, Patent, Octagon, Retinned. Molds, Patent Turban, Retinued. 

21 Milk Pans, Plain, Flat Edge Quart...... 1/4 1/4 1 11/4 2 3 3 31/4 1 X, per doz..\$5.63 .83 1.05 1.13 1.35 1.73 1.95 Quart...... 4 5 6 8 10 12 1 X, per doz. 2.85 3.30 3.53 4.13 4.50 5.10 I X, per doz. 2.85 3.30 3.53 4.13 4.50 5.10 I XX, per doz. 5.10 5.40 6.45 Pudding Pans, Extra Deep, Retinned, Heavy. Quart 5.8 2.18 2.18 2.55 2.93 2.38 Quart 4.5 6 8 10 I XX, per doz. 4.13 4.58 5.18 6.38 6.90 Pudding Pans, Extra Deep, Retinned, Light. Nos ..... 15 16 17 18 19 20 21 22 Quart..... 12 1 1½ 2 3 4 5 6 1 X per doz. \$1.65 1.88 2.18 2.48 2.85 3.30 3.83 4.13 Pudding Pans, Extra Deep, Plain, Light. Pudding Pans, Medium Deep, Retinned. Nos.... off ot8 020 022 024 026 028 030 Per doz. \$3.75 4.13 4.73 5.33 5.93 6.53 7.43 8.10 Preserving Kettles, Lipped, Rotinned. Nos.... 165 185 200 220 240 260 280 300 320 Per doz.\$3.83 4.05 4.50 5.63 6.15 7.35 7.95 8.78 9.38 Pudding Pans, Oval, Retinned. 

Quart.... 7 8 10 14 17 21 Per doz...\$6.53 7.13 7.50 9.00 10.50 12.0 Stew Pans, Shallow, Retinned. Saucepan Covers, Retinned.

Water Pails, Retinned.

Nos..... 4 5 6 7 8 8½ Per doz..\$7.88 8.78 9.75 11.25 13.88 15.75 So. 90.90 Per doz ...\$19.28 22.35 26.03 30.75 COMMON STAMPED WARE, ETC. Bucket Covers.

5 3-16 .... 6 5-16 6 % 3.08 3.60 3.75 4.50 Cake Box Covers. | Dairy Pans, Plain, Flat Edge. | Small, Medium, Large. | Large | Larg

| 22 7  |
|---|
| Inch 1134 1134 1134 12 1234   |
| Inch.         11½         11½         11½         11         12         12½           Per gross.         \$12,38         13.05         13,59         14,425         15,36           Inch.         12½         12½         13½         13         13½         13           Per gross.         \$15,75         16.35         17,63         18.60         20.25  |
| Per gross\$15.75 10.33 17.03 18.00 20.25<br>Pot Covers, Hemmed and Ringed.  |
| Pot Covers, Hemmed and Ringed.  Inch  |
| Inch 8¼ 9 9¼ 9½ 9½<br>Per gross 10.88 11.25 11.78 12.00 12.45   |
| Inch 1e 10% 10% 10% 11<br>Per gross 12.90 13.50 13.80 14.25 14.93   |
| Per gross 15.38 16.05 16.50 17.25 18.30   |
| Por gross 18 ss 10 3s 20 63 21 60 22 25   |
| Inch 6 7 8 Scintoin. 9 10 11  |
| Bakers' Plates.   |
| Per gross. \$4.50 5.10 5.85 6.90 7.30 10.00 11.05  Bakers' Plates.  Inch 6 65% 7 75% 7% 8 8 8%  Per gross. \$4.50 5.10 5.10 5.85 5.85 5.85 6.00  Inch 8½ 8¾ 9 9½ 9% 100  Per gross 6.90 6.90 7.20 10.00 10.00 10.00  Pie Plates, Deep.  |
| Inch  |
| Per gross   Jelly Cake Pans   Jelly Cake Pans |
| Deep Jelly Cake Pans. Inch  |
| Mountain Cake Pans.  Inch   |
|   |
| Inch 3 3% 3% 4% 5 5%<br>Per gross\$1.35 1.80 1.80 3.25 3.00 3.60  |
| Plain 1½ 2 3 4 5 6 qts. Inch 3 3½ 3½ 4½ 5 5½ Per gross\$1.35 1.58 1.80 2.25 3.00 3.60 Rimmed 2½ 3 3½ 4 4½ in. Per gross\$2.63 2.85 3.53 4.13 4.73   |
| T. K. Breasts, with Plain Covers.   |
| T. K. Breasts, with Plain Covers.  Inch   |
| Per gross \$14.63 16.88 19.73 21.98 24.75<br>T. K. Breasts, with Rimmed Covers.   |
|   |
| Inch  |
| Grater Plates.  Sheet   |
| Scalloped Cake Pans.   Small.   Large.   Without Tubes, per gro.   \$3.25   12.30   With Tubes   11.25   15.30  |
| Stemped Square Pans   |
| Sheet   |
| Per gro \$9.00 19.13  |
| Milk Skimmers, Plain or Pierced, per gro\$5.18<br>Lettered Plates.  |
| Inch  |
| Steamer Bottoms,   3,68   4.50  |
| Steamer Bottoms   |
| Steamer Bottoms   |
| Steamer Bottoms   |
| Steamer Bottoms.   \$\frac{5}{4} & 6 \\   Per gro.  |
| Letterd Flates  |
| Steamer Bottoms.   \$3,68   4.50  |
| Inch  |
| Steamer Bottoms.   \$\frac{5}{4} & 6 \\   Per gro.   Steamer Bottoms.   \$\frac{3}{4} & 6 \\   Add \\$2.25 per gross to list of Pot Covers.   Tin Stove Pipe Rings.   Inch.   4 & 4 & 5 \\   Piain.   Per gro. \\$4.50 & 3.10 & 5.63 \\   Japan'd or Burnished,   6.75 & 7.35 & 7.88 \\   Inch.   Priain.   Per gro. \\$6.23 & 6.75 & 7.88 \\   Inch.   Priain.   Per gro. \\$6.23 & 6.75 & 7.88 \\   Japan'd or Burnished,   9.00 & 9.60 & 11.85 \\   Coffee Boller Lips.   To Rivet, Small, per grows.   \$1.13 \\   Large  |
| Steamer Bottoms.   \$\frac{3}{6} \ \ 6 \ \ Per gro.   \$\frac{3}{3}.68 \ 4.50 \ \ Steamer Bottoms.   \$\frac{3}{4}.68 \ 4.50 \ \ Add \\$2.25 per gross to list of Pot Covers.   \$\text{Tin'} Stove Pipe Rings.   \$Inch  |
| Inch  |
| Steamer Bottoms.   \$3,68   4.50  |
| Steamer Bottoms.   \$\frac{5}{4} & 6 \\   Per gro.   \$\\$3,68 & 4.50 \\   Steamer Bottoms.   \$\\$40 & 4.50 \\   Inch.   \$\\$70 & 4.50 & 5.10 \\   Plain.   \$\\$70 & 4.50 & 5.10 \\   Japan'd or Burnished,   \$\\$6.75 & 7.35 & 7.88 \\   Inch.   \$\\$90 & 5.63 & 6.75 & 7.88 \\   Inch.   \$\\$90 & 5.63 & 6.75 & 7.88 \\   Inch.   \$\\$90 & 5.63 & 6.75 & 7.88 \\   Inch.   \$\\$90 & 5.63 & 6.75 & 7.88 \\   Inch.   \$\\$90 & 5.63 & 6.75 & 7.88 \\   Inch.   \$\\$90 & \$\\$90 & \$\\$0.60 & 11.85 \\   Coffee Boiler Lips.   \$\\$1.13 \\   Large   \$\\$1.25 & \$\\$1.80 \\   To Rivet, Small, per gross   \$\\$1.73 & 2.25 & 2.85 & 3.38 & 3.98 \\   Inch.   \$3 & 3\\\   \$4 & 4\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\  |
| Steamer Bottoms.   \$\frac{3}{6} \ 6 \ Per gro.   \$\frac{3}{3}.63 \ 4.50 \ Steamer Bottoms.   \$\frac{3}{4}.63 \ 4.50 \ Steamer Bottoms.   \$\frac{1}{6} \ Per gross to list of Pot Covers.   \$\text{Tin'} Stove Pipe Rings.   \$Inch   |
| Inch  |
| Sealloped, per gross \$1.73   |

Glengarnock.... Eglinton.

Manufactured Iron.—There is no change to note, the market remaining quiet under a steady demand. Best Staffordshire Bars, £7 @ £7. 10/.

Steel Rails-Business has been fairly active during the week, with a tendency toward higher prices. We quote: Ordinary Sections, £6. 10/@ £6. 15/.

Iron Rails.-The market is quiet, with a fair business doing. Prices are firm. We quote Welsh, unchanged, £5 @ £5. 10/

Old Rails-The heavy demand of the past two weeks has fallen off, and transactions have been lighter, with small offerings. We quote Old Ts. firm at £4.7/6.

Scrap-The market is quiet, with fair business doing. The offerings are moderate. We quote Wrought firmer at £3. 10/.

#### IRON.

to note in the condition of the Iron market month promise to be very small; it is this week. The sales reported have not the text proving our right and the this week. The sales reported have not been heavy, but we hear of an active inquiry, and the tone of the market is strong. We quote best Lehigh brands as follows:

Foundry No. 1, \$25 @ \$26; Foundry No. 2, \$22 @ \$23; Gray Forge, \$20 @ \$21. \$22 @ \$23; Gray Forge, \$20 @ \$21.

Scotch Pig.-Sales are reported since our last writing of 500 tons Scotch Pig, in lots, on terms that have not transpired, and 300 tons Gartsherrie, from yard, at \$24: terms, prompt cash. The business in foreign Iron is retarded on account of the difficulties attend-

now held at \$19. We quote Eglinton, \$22 @ \$22.50; Carnbroe, \$22.50 @ \$23; Coltness, \$24.50 @ \$25; Glengarnock and Gartsherrie, \$23.50 @ \$24.

Rails .- We hear of considerable business in Steel Rails during the week, but were unable to learn full particulars. Of foreign a sale of 3000 tons English Steel on private terms is reported. In Iron Rails we do not hear of any new business, and quote, nominally, Iron, \$43 @ \$50, and Steel, at mill, \$50 @ \$62.50.

Old Rails.-Sales are reported of 1000 tons Ts at \$28.75, and we hear rumors, which we were unable to confirm, of a large transaction in Double Heads. The demand is not as active as it was last week, and although there is no weakness apparent, the market lacks vim. We quote holders' views, \$29 @ \$31 for Ts and D. H., respectively.

Scrap .- We quote Prime No. 1 Wrought, from yard, \$30 @ \$31.

#### METALS.

Copper-Has been firm, but with little doing, only 100,000 lb Lake Superior selling at 19%; for the bulk of holdings, 19%; is asked. Baltimore may be quoted at 18%; @ 18%; There is no change in the Lon-(a) 18% c. There is no change in the London market. From Valparaiso, by cable, the capture of Lima, the Peruvian capital, by the Chileans, under command of General Baquedano, is announced to have taken place on January 17, followed by the surrender of its port, Callao. We shall now soon hear whether this event will put an each to the war. If it does Conver produce end to the war. If it does, Copper produc-tion in Chili, which had declined some 10,000 tons last year, from an insufficiency of miners, may soon recover. The charters on the West Coast have been:

| 1874. 50,000 1878. 1875. 48,000 1879. 1886. 1887. 49,000 1887. 44,000 | 50,600    |
|---|-----------|
| TOTAL PRODUCTION, AND IMPORT AND E<br>COPPER IN ENGLAND.              | XPORT OF  |
| Prod'n & Import.<br>Tons.   | Export.   |
| 1871 74,700   | \$5,88q   |
| 1872 90,100   | 46,600    |
| 1873 78,400   | 55,460    |
| 1874 80,500   | 59,646    |
| 1875 86,100   | 51,339    |
| 1876 86,400   | 53,737    |
| 1877 104.300  | 54,034    |
| 1878 96,200   | 57.306    |
| 1879 103,200  | 66,339    |
| 1880 95,300   | 58,610    |
| IMPORT INTO ENGLAND OF SPANISH PRECIP PYRITES (FINE COPPER).          | TTATE AND |
| Tone I  | Tons      |

| Tons.                   |                          |
|-------------------------|--------------------------|
| 1875 18,511             |                          |
| 1876 18,990             |                          |
| 1877 27,002             | 1880 34,652              |
| 1871£64. 00/ @ £85. 00/ |                          |
|                         | 1877. 64. 00/ @ 73. 10/  |
| 1873 79. 09/ 6 92. 00/  |                          |
|                         | 1070. 55. 00/ (3 00. 00/ |
| 1874. 74. 10/ @ 87.00/  |                          |

The annual review of the San Francisco

Commercial Herald contains the following:
"During the year 1880 the production of Copper Ore has been mainly from four points of
supply, viz., Newtonville, Spencerville,
Battle Mountain and the Napoleon and Campo Seco mines in Calaveras County Arizona has about commenced producing, and it is reported will, before long, supply fully one-fourth of the United States confully one-fourth of the United States consumption, equivalent to 10,000,000 pounds. During the past six months some 2000 tons of ore, carrying from 10 to 15 per cent. of pure metal, have been received from the Napoleon and Campo Seco mines. Large quantities of low-grade ores, both from the mines of Spencerville and Newtonville, have been utilized during the past year in the manufacture of Copper cement, which, with the ores mentioned above, have been ourohased under contract by H. D. Raulett. purchased under contract by H. D. Raulett, and shipped by him to the Baltimore Copper Works, for which he is the resident agent. About three months ago a large cave oc-purred in the mine of the San Francisco Copper Company, at Spencerville, and un-fortunately at a time when an extensive body of rich ore was about to be opened. Though active operations have since taken place, it is thought that fully a year must elapse before the company can reach the ore deposit covered by the cave. The Copper The Copper mines of Copperopolis, so rich and extensive in their day, have now remained idle for 13 years, and at present there appears but little prospect of resuming work." Manu-factures remain as under: Bottoms, 31¢; Braziers, according to size, 28¢ @ 34¢; Circles, 31¢ @ 34¢; Segment Sheets, 31¢; Fire-box Sheets, 28¢; Sheathing, 26¢; and

Tin .- A great change has come over our market since our last report, and prices of Straits Tin have advanced to 201/20 @ 203/40, the tendency remaining upward at the close. A large business has been done during the week, about 1500 tons having been sold to dealers, including a lot of 500 tons held by speculators, but now transferred to more desirable hands. In this manner the mar-ket has got into a much better and healthier state, and the prospect of higher prices being established is strengthened. Singapore cables \$28 per picul, and London, Straits Tin American Pig.—There is little change from the Straits to the United States this

Bolt Copper, 28¢.

| G 20/2/                                  | Canvas, Linen     | D, 3%c. @ 4 C.  |
|--|-------------------|-----------------|
| WORLD'S SUPPLY OF TIN DURING TO YEARS,   | White Cotton, New | 3 % C. @        |
| Tons.   Tons.                            | 16 No. 2          | 216C. @         |
| 1871 28,156 1876 33,313                  | White, No. 1      |                 |
| 1872 33,680                              | NO. 2             | 2 1/4 C. @ 3 C. |
| 1873                                     | Seconds           | 1 14c. @ 14c.   |
| 1874 30,505 1879 37,630                  | Soft Woolens      | 100. @ 11C.     |
| 1075 30,057   1880 30,058                | Mixed Rags        |                 |
|  | Gunny Bagging     |                 |
| Tin Plates,-There has been more inquiry, | Jute Butts        | 8 % C. @ 3 C.   |

ing transportation, it being in many instances almost impossible to bring lighters alongside the piers, owing to the quantities of ice in the rivers, and cartage through our streets is difficult and dangerous in their present condition. Sales are reported of 1000 tons Middlesboro No. 3 Redcar at \$18.50, Coke Tin, \$4.90 @ \$5; and ditto Ternes,

|       |      |   |   |     | CN | G | L | AND'S TO | TAL EXPORTS.      |         |
|-------|------|---|---|-----|----|---|---|----------|-------------------|---------|
|       |      | - | _ |     | _  |   | - | Tons.    |                   | Tons.   |
| 1871. | <br> |   |   |     |    |   |   | 119,750  | 1876              | 132,39  |
| 1872  |      |   |   |     |    |   |   | 118,083  | 1877              | 153,10  |
| 1873. |      |   |   | 0 0 |    |   |   | 130,468  | 1878,             | 155,07  |
|       |      |   |   |     |    |   |   | 122,783  | 1879              | 197,840 |
| 1875. |      |   |   |     |    |   |   | 138,563  | 1880 (11 months). | 199,652 |

place the shipments to this country in 1880 at 164,284 tons, against 155,595 tons in 1879 Lead.-There has been a good deal doing since our last report, some 1200 tons Common Domestic selling early in the week at  $434\phi$  for February and March delivery, and 200 tons at the same figure on the spot. The market is since firm at 5¢. Of Refined, some 600 to 800 tons sold yesterday at 5¼¢,

which is the closing quotation. There is a strong tone in the general Lead market at strong tone in the general Lead market at the close. Statistics are produced showing that there have been consumed in the United States, in 1880, no less than 90,000 tons of Lead. Among the desilverizing works, Pittsburgh turned out in 1880, 13,000 tons; St. Louis, 7500; and Newark (Balbach), 17,000—the former two corroding Lead exclusively, while the bulk of the last is common. The import of Lead into England has been:

|              | lo.<br>estimate<br>Tons. | ed.) 1879.<br>Tons. | 1878.<br>Tons. |
|--------------|--------------------------|---------------------|----------------|
| Export       | 96,0 0                   | 37,007              | 34,38          |
| ENGLAND'S PR |                          | N PROM NATIVE MI    |                |
|              | Tons.                    |                     | Tons.          |
| 1871         |                          | 1876                |                |
| 1872         |                          | 1877                |                |
| 1873         |                          | 1878                |                |
|              |                          | 1879                | 51,635         |
| x874         |                          | 1880 (estimated).   |                |

| a, of Lead, were:       | 1879.<br>Tons, | 1880.<br>Tons. |
|-------------------------|----------------|----------------|
| ew York                 |                | 9,190          |
| nina                    | . ISO          | 1              |
| pan                     | . 101          | 1              |
| ctoria                  |                | 69             |
| ngland, &c              |                | 15             |
| Totals                  | . 6,413        | 9,276          |
| he Pacific Coast produc | t of Lead is   | large,         |

far beyond our own wants, hence we are compelled to ship the bulk of our Pig Lead to New York. The price in China is too low New York. The price in China is too low to admit of shipments to that market. Our yearly product is from 5000 to 6000 tons. We have a shot tower in this city that sup-plies all the local requirements of the Pacific slope; also manufacture Lead Pipe, Sheet slope; also manutacture Lead Pipe, Sheet Lead, &c. Following are the prices at the factory: Lead Pipe, 8¢; Sheet Lead, 9¢; Soil Pipe, 11¢; Drop Shot, \$2.10 per bag; Buck Shot, \$2.30 per bag; Manufactures are quoted as follows Sheet Lead, 7¢; Lead Pipe, 6½¢; Tin-lined ditto, 15¢, and Block Tin Pipe, 40¢.

Spelter and Zinc .- The price of Common Domestic Spelter, under a steady demand, has continued to harden, and may at the close be quoted at 5½¢. Silesian is held at 5½¢, but at this figure no demand manifests itself. Sheet Zinc may be quoted at 7¢ @ 71/8¢.

Antimony—Remains quiet and unaltered Ptlm., gals.148,283 15,000 at 14% @ 15%, as a range.

#### COAL.

During the past week the domestic con-sumption has been large, and as a result there has been a good demand from the yards. Out of town stocks are getting yards. Out or town stooks are getting short and retail merchants are trying to get supplies. This makes the domestic market active and strong. The quantity of Coal coming down is small, and is just about sufficient to supply the demand. Owing to the fact that the buyers are, so far as we can learn, those who are getting short of Coal and must have it at once for present use, Coal on the spot is eagerly taken. Some up-river retailers are talking of rail shipments from this city.

There are manufacturers in the market who are getting short, but they are only taking what they need for the present. Cold Ag. imp. pkgs 400 weather and steady work has reduced their stocks more rapidly than usual. It is the opinion of many that this year the consumption is some months ahead of that of last year. Inquiries are coming in from the large establishments concerning prices for the spring, but, as these have not been fixed, such letters can only be classed as nibbles.

Full circular rates-\$4.45-can be obtained for Stove on most kinds. Free-burning Chestnut is a little off, probably owing to the circular of the Pennsylvania Coal Company, which is considerably below the others. It quotes Chestnut at \$3.95, Stove at \$4.30, and other sizes at \$3.95. Some Lehigh is quoted as high as \$4.15. The larger sizes are not in demand. Freights are high. Port-land is quoted at \$1.30, Boston \$1.50 @ \$1.60, and New Haven 70¢ @ 75¢.

#### OLD METALS, PAPER STOCK, &c.

The purchasing prices offered by dealers opper, heavy...

Yellow Metal.

Brass, heavy

|   | Lateron, 146 tre   | .00      | 1689  | , 097   |
|---|--|----------|-------|---------|
|   | Composition, heavy "   | . 33%    | 0     | . 845   |
| ۱ | Lead, heavy  | .0436    |       | .043    |
| ı | Tea Lead "   | .0334    |       | .04     |
|   | Zinc **  | .03%     |       |         |
| ı | Pewter, No. 1 "  | .14      | 6     |         |
| ı | Pewter, No 2   |          | 8     |         |
| 1 | TEW DOI, NO 2  | .08      |       | .09     |
| ı | Wrought Iron ton   |          | @     | 23.00   |
| Į | Light do   | 10.00    | 9     |         |
| ı | Stove Flate  | 13.00    | 0     | 13.00   |
| ı | Machinery do   | 16.00    | 0     | 17.00   |
| 1 | Grate Bars   | 7.00     | 0     | 8.00    |
| 1 | The prices aument for De   | 0        | -     |         |
| 1 | The prices current for Ra  | gs, occ. | 2 8   | rea m   |
| 1 | follows:   |          |       |         |
| 1 | Clares Viene   | n &      |       |         |
| ı | Canvas, Linen  | B ID, 3% | c. 6  | 24 C    |
| Į |  | 378      | W- 1  | 30      |
| ļ | 16 No. 2   | 11 21/2  | c. 6  | B       |
| 1 | White, No. 1   | 43/4     | C. 6  | B 4560  |
| 1 | 16 No. 2   | 00 23/4  | c. 6  | 2 3 C   |
| 1 | Seconds  |          |       | \$ 116C |
| 1 | Soft Woolens   | to roc.  |       | L HIC.  |
| j | Mixed Rags   |          |       | 0 21/4C |
|   | Gunny Bagging  | 3C.      |       |         |
|   | TRANSPORT OF THE PROPERTY OF T | 1.32     | C. 60 | Done    |

|   |   |                      | <br>                                |
|---|---|----------------------|-------------------------------------|
| - | Kentucky Bagging. Book Stock. Newspapers. Waste Paper and Scraps. Kentucky Bale Rope. | 66<br>66<br>86<br>86 | @<br>@ 2½c.<br>@ 1½c.<br>@ ½8.<br>@ |
|   |   |                      |                                     |

Of Hardware, Iron, Machinery, Metals, &c., from the Port of New York, for the Week ending January 25, 1881:

| 7       | Copenhagen.   | Tarragona.  | Pumps, pags.<br>Ptg. matl, pgs<br>Spikes, kegs. |  |
|---------|---|---|---|--|
| 8 1 9 2 | Quan. Val. Clocks, bxs 33 \$275 Mf. iron, pkgs 22 531                                   | Quan. Val.<br>Ptlm., gals.180,000 18,450<br>Nails, kegs 30 127                              | Pitdware, cs<br>Cisplatine R                    |  |
| ,       | Bremen. Ag. imp., pkgs 194 2,965  | Constantinople. Ptlm., gals.65,860 0,850  | Hdw., cs<br>Car. mtl.,pkgs<br>Tacks, cs         |  |
|         | Iron g'ds, cs 1 520<br>Mf. iron, pkgs 6 108   | United States of Co-<br>lombia.   | Idoks, Co                                       |  |
| 6       | Antwerp.  Ptlm., gals. 365,710 27,100 Telephones, CS 21 1,750 Lub. oil, bbls. 125 1,106 | Hdw., pkgs 277 4,474<br>Shot, pkgs 13 49<br>Mr. iron,pkgs.1748 1,741<br>Nails, kegs 105 451 | Of Hardwar                                      |  |
| ,       | Hull. 8 195 Car wheels 23 115   | Cartridges, os 23 882<br>Carbines, cs 4 440<br>Rifles, cs 6 2,123<br>Iron, bdls 184 988     | January 2.                                      |  |
| 1       | Hdw., cs 101 3,158  | Tinware, cs 8 410   | Barbour, Bros.                                  |  |

Clocks, bxs... 67 1,030 Ptlm.. gals.148,526 14,481 Pumps..... 3 250 Ag. imp., pkgs. 3 305 Dutch West Indies. Ptlm., gals...:1744 199
Mf. iron, pkgs 3 189
Ms.heathing.es. 13 199
W. screen, es. 1 177
Brass, box. 1 196
Hdw., es. 1 177
Sew. ma., cs. 3 34 Sew. ma., cs.
Wire, bdls....
Pltdware, cs.
I. r. goods, cs.
Quicksi'r,fiks.
Zinc, cs....
Mf. brass, pgs Dutch East Indies.

Mr. orass, pgs Carriage.... Powder, pkgs. Ptg. ma., pkgs Tacks, cs.... Electrot'ps, cs Telph.mtl., pg Ptim., gals 330,000 40,800 Hamburg. Iron safes.... Tin, bxs..... 1,345

Glassw're, cs. 28
Stoves, cs. ... 150
Sew. ma., cs., 309
Telephones, cs. 1
Belting, pkgs. 6
Revolvers, cs. 2
Ag. imp., pkgs. 3
Mf. iron, pkgs. 27
Spelter, slabs.2603
Hdw., cs. ... 31
Ptg. math., cs. 7
Clocks, cs. 4
Lub. oil, bbls. 7
Machy., pgs. 10
Lr.goods, bale 1
Ag.imp., pkgs. 12 2,300 30 350

Liverpool. Lub. oil, bbls. 437 6,021 Pistols, cs... 5 100 Machinery, cs 17 3,228 Pistols, cs... 5
Machinery, cs. 17
Ptlm., gals.261,565
Platina, cs... 1
Hdw., cs... 18
Clocks, pgs... 21

Ptulina, gails, 201, 505 37/, London.

Dublin.

Cette. Ptlm., gals. 144,820 10,568 Dunkirk.

Ptlm., gals. 375, 124 27, 277 British Possessions in Africa. Hdw., pkgs. 1008 8,908
Glassw'e, pkgs 4 54
Clocks, cs... 1 38
Wire goods, cs. 2 97
Cutlery, cs... 1 165
Sew. ma., cs.. 10 560
Rifies, cs.... 2 310
Elec. pka's, cs. 9 305
Rails, kegs... 165
Sylidware, cs.. 7 515
Cye. mil., pgs 7; 916
Carriages 58 18,179
Carriages 2 242
L'mp g'ds, cs. 7 111
Grindstone fix., pkgs... 7 46

British West Indies. Ptlm., gals..rs,610 2,331 Hdw., cs..... 10 90

Carriages.... Car mtl., pgs. Mach'y, cs... Silex, bbls... Nails, kegs... Wire, spools... Wire, spools... Car fixts., cs., Ag. imp., pkgs 3 Hdw., pkgs... 10x Nails, Cs.... 2 Lmps, &c.,pgs 15 Sheet iron, Cs. 10 Car mtl., pgs. 14 Ptlm., gais. 28,500 Grindstones... 319

Grindstones.. Wire, spools.. Brass. bbi.... Rifles, cs.... Cars, bdls... Clocks, cs. . . . Frucks, pkgs. 54 28 Nails, acombodis of Hoop iron, bdls of Gas fixt., pks. 14 Hoops......653 Pltdware, cs... Tel. mtls., pgs Coal, tons.... 4 Brasil.

Ptim., gals. 108,751 23.308 Hdw., cs. ... 290 4,599 Mf. iron, pkgs 37 Ptg. matl, pgs 2 Clocks, bxs. ... 20 Cutlery, cs. ... 3 75 Sew. ma., cs. ... 40 1,809 

Wire, spools...
Tel. mtl., pkgs
I r goods, cs...
Belting, cs...
Nails, bxs...
Mach y, pkgs...
Hdw., pkgs...
Nails, kegs...
Glassware, cs.
Mf. iron, pkgs
Cuttery, cs...
Clocks. cs... 357 440 1,250 309 789 806 800 840 150 107 83 Argentine Republic. Grindstones.
Revolvers, cs.
Pumps, pkgs.
Ptg. matl, pgs
Spikes, kegs.
Pltdware, cs. | Grindstones... 39 | 840 | 840 | 940 | 840 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 94

#### IMPORTS

Of Hardware, Iron, Steel and Metals into the Port of New York, for the Week ending January 25, 1881 :

Machy, cs., 6
Brown, William,
Grinding stone
Case, 1
Boker, H. & Co.
Cases, 12
Casks, 3
Bach, E. Bach, E.
Cases, 3
Cask, 1
De Lima, D. A.
Galvanized spikes,

pkgs., 6 Drexel, Morgan & Co. Drexel, Morgan & Co.
Steelware, Cs., 4
Frasse & Co.
Mdse., pkgs., 2
Field A. & Co.
Mdse., pkgs., 37
Casks, chain, 29
Graef Cwilery Co.
Cuitery, cs., 27
Packages, 2
Hartley & Graham,
Mdse., pkgs., 3
Higer, Ernest
Ironware, pkgs.,
Howard, Bros. & Res Brown Bros. & Co.

Higer, Ernest Ironware, pkgs., 32 Howard, Bros. & Read, Mdse., pkgs., 15 Moore's Sons, J. P. Cases, 12 Arms, cs., 29 Lewis, Schiele & Co. Steelware, cs., 2 Steelware, cs., 3 Merchants' Dis. Co. Arms, cs., 6 Patrick, R. & Oo. Case, 1 Robinson, W.

Hardware.

3,331

313 460 68

158

Hayti.

Central America.

Glasgow.

Mach'y, cs... 2 1,155 Lub. oil, bbls. 9 295 Belting, cs... 2 271 Sew. ma.. cs.. 2 338 Clocks, bxs... 49 1,019 Hdw., cs... 5 467 Mf. iron, pkgs 2 25

Havre.

ican Colonies.

Gothenburg.

Feneruela,

Ptlm. gals. 4,953 Cutlery, cs... 3 Mf. iron, piggs 71 Sew. ma, cs... 17 Nails, kegs... 12 Tinware, cs... 12 Hdw., cs.... 43 Sew. ma,, cs... 63 Lamp 2ds. pgs 31

Triesto.

Ptim., gals. 393, 279 37,500

Porto Rico.

Glassw'e, cs... 25
Mach'y, cs... 10
Hdw., cs... 14
Ptlm., gals... 855
Tinware, cs... 1
Mf. iron, pgs. 48
Wire, spools... 93
Ag. usp., pkgs 3
Carriage 1
Grindstones... 10

China.

British Australia.

Beyrout. Ptlm., gals. 115,000 13,000

Mexico.

Sew. ma., cs... Lamp gds..pgs Blocks, pkgs... Pitdware, cs... Clocks, cs... I r goods, cs... Glassw're, cs.

Classw'e, pgs. 14 Mach'y, pkgs. 8 Nails, kegs. 46 Zinc, esks. 2 Ptlm., gais. 2,383

Nails, kegs. 58 185
Sew. ma., cs. 1 50
Iron, tons... 92 5,000
Pilm., gals... 13,029 1,823
Hdw., cs... 45 955
Mf. iron, pkgs 6 125
Cutlery, cs. 5 141
Mach'y, pkgs. 30 1,170
Iron, bdls... 13 83
Gkasware, cs. 8 241
Tin, bss... 9 31 Robinson, W.
Arms, Cs., 1
Schovering, Daly &
Gales,
Cases, 12
Temple & Lockwood,
Steel tires, 22
Wiebusch & Hilger
Hdw. Co.
Cutlery & hardware,
pkgs., 48
Witte & Bro., J. G.
Cutlery, cs., 10

Cutlery, cs., 19 Sheep shears, cks. Order, Machy, plays., 8 Emery stone, tons, 131 Iron. Baring, Bros. & Co. Swedish bars, 2012 Wire rods, coils,

Pitdware, cs. 1 100 Telephone, cs. 1 100 Mach'y, cs. . 4 1,225 Ptlm., gals. 382,702 19,082 Ag. imp., pkgs 113 8,524 

Morris, L. W. Pig, tons, 25 Canada. Sew. ma., cs.: 1 86 British North Amer-

Nevada Bank of San Francisco, Pig, tons, 200 Pomares & Cushman, Old iron, tons, 48 Whitney, A. R. Bdle., 1

Bdle., 1 Order, Ore, tons, 1718 Rail ends, tons, 500 Pig, tons, 1154 Old iron, tons, 24 Old rails, tons, 997 Bars, 1736

Brown Bros. & Co.
Packages, 132
Baring Bros. & Co.
Rods, bdls., 154
Brown, Wm.
Bundles, 90
Drexel, Morgan & Co.
Blooms, tons, 400
Lee James & Co.
Blooms, 85
Moss, F. W.
Bundles, 140
Bars, 31
Woodford W. O.
Bundles, 290
Bars, 43
Cases, 46
Order,
Spring steel, tons,
100
Blooms, nor, 46

Blooms, pcs., 968 Rods, bdls., 1650 Bundles 28 Bundles, 78 Cases, 9 Cask, 1 Metals.

Dickerson, Van Dusen & Co.
Tin plates, bxs., 1993
Haya, J. & Co.
Tin plates, cs., 3
Laidlaw & Co.
Lead bars, 2000
Montell, F. T. & Son.
Brass, bbl., r
Moses, J. H. & Co.
Metal, cases, 3
Copper, cases, r
Netherland Trading
Society.

Netherland Trading Society, Tin slabs, 2079
Naylor, Benzon & Co.
Tin plates, bxz., 2745
Pacific Mail S. S. Co.
Old metal, pce., x
Old metal, bbls., 39
Conper cases, 7

Old metal, bbls., 39
Copper cases, 7
Phelps, Dodge & Co.
Tin plates, brs., 1752
Black tag., brs., 125
Pope, Cole & Co.
Copper pcs., 561
Copper pcs., 562
Copper bars, 93
Semon Bache & Co.
Tin plates, cases 2
Order,
Nickel, bbls., 23
Nickel, cases, 2
Tin alabs, 4621 Tin slabs, 4621 Tin, bbls., 25 Tin plates, bxs., 27 Tin, ingots, 898

#### PHILADELPHIA.

Office of The Iron Age, 220 South Fourth St., } PHILADELPHIA, Jan, 25, 1881.

Ptlm., gals ..8,000 1,090 Copper, case. 1 42 Prim., gals ... 8,000 [1,000]
Copper, case. 1

Retterdam.

Lub. oil, bbls. 75 [1,600]
Hdw., cs. ... 1
Wringers. cs. 40 [1,600]
Crucibles, hhd. 10 [1,000]
Rg. imp., pkgs 10 [1,700]
Rg. imp., pkgs 10 [1 only move in one direction, and the delivery of a single load of goods frequently leads to Ag. imp., pkgs 30 2,400 a blockade extending several squares. An early change is hoped for, but in the meantime there are no indications of anything more favorable. There can be no doubt that this has been a serious drawback to business, this has been a serious drawback to business, not only here, but throughout the whole of this and adjoining States. The tone of the market, however, is steady, especially in all kinds of raw material. The change, if any, is rather in the way of improvement, and good brands are held firm, or at a slight advance. Anthracite No. I has been sold in lots of considerable size at \$25.50, and with very few exceptions \$25 may be considered. very few exceptions \$25 may be considered an inside price. No. 2 Foundry is firm at \$22 @ \$22.50; stocks rather bare. of fact, offerings are not in excess of the demand, and, as production is large, it is assumed that current deliveries are chiefly on contracts made some time ago. When the demand sets in again, as it soon must, prices may be expected to harden, and it would occasion no surprise to find, on favorite brands, an advance of a dollar or two firmly established. This opinion is based on the expectation of a more active demand. and on the fact of an advance in ores which has been realized during the past month. Stocks of foreign Iron have been reduced considerably, and the advance in freights Ptlm.gals.440,000 53,000 Cartridges, cs I 30 Hdw., cs..... 4 465 -said to be \$1 or more—is so much against urther imports. Taking everything into further imports. Taking everything into consideration, therefore, present prices may be regarded as very reasonable. There is already an inclination to place orders for deliveries extending over three months, but sellers ask 50% @ \$1 more for anything beyond February. Mill Irons have not shown much change, and \$20 @ \$21.50 for Gray Ferge pretty well covers the market. There 349 is less firmness than in Foundry Irons, and

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feed made irrebeil c. if comfor tion I tive entl done very hear

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there would be no difficulty in placing heavy White and Motorders at these quotations. tled Irons appear to be plenty at \$18 @ \$19.50, and a good many sales are reported at prices within the limits named. English Iron, at the low prices paid a month or six weeks ago, could be easily placed, but most of the large lots have been cleared out and \$19 @ \$20 is asked for what remains. Scotch Iron moves very slowly, and at \$22 for Eglinton and \$25 for Gartsherrie only a retail business can be done. Bessemer Iron continues to sell in large lots, and there are reports of very heavy transactions. We menports of very heavy transactions. We men-tioned sales of 30,000 tons last week, which have since probably been further increased, but to what extent it is impossible to say, About \$27.50 is asked for foreign Bessemer, but we have not heard of transactions to average over \$27, although the market is firm, with an upward tendency. Charcoal Iron is steady; \$33.50 @ \$35 quoted for Warm Blast and \$37 @ \$39 for Cold Blast, some very favorite makes bringing still higher figures.

Blooms.-The demand has been very ac Blooms.—The demand has been very active, and most of the forges are sold close up at the following figures: Charcoal Blooms, \$65; Run-out Anthracite, \$55; Sunken Scrap Blooms and Northern Ore Blooms, \$45 @ \$50.

Muck Bars,—Prices show very little change; occasionally \$38.50 at mill is obtained for a small lot, but \$38 is the more general quotation for lots of 200 tons or Sales are reported at \$38 for about 600 tons and \$38.50 for 50-ton lots.

Structural Iron-Without any very large individual transactions, the amount of business placed last week was fairly satisfactory to sellers. Manufacturers appear to be confident of an abundance of work, and prices are therefore held moderately firm.

The demand has been more than usually active from the shippards, all of which are full of work. Car builders are also steady buyers, and a good deal of work has come in from bridge builders, with more and larger orders expected toward spring. The same may be said in regard to architectural work; inquiries are numerous and prospects favorable for a heavy demand. Prices quoted are 2.6¢ for Angles; 2.9¢ for Beams and 3¢ @ 3.1¢ for Channels and Tees.

Plate and Tank Iron.—Business is very disappointing, and most of the mills are beginning to feel short of work. Sales during the week have been of quite a trifling character, and some anxiety is manifested in regard to new business. There has been a little more inquiry for Tank Iron during the past two or three days, but there is nothing past two or three days, but there is nothing to warrant very sanguine expectations in regard to the immediate future. Prices, as may be supposed, are a trifle easier, and for a desirable order it is likely that concessions would be made from the following asking rates: Tank Iron, 2.75¢; C. No. 1, 3.2¢; C. H. No. 1, 3.4¢; Flange Iron, 4½¢@ 4¾¢; Fire Box, 5½¢@ 5¾¢.

Sheet Iron.-A fair demand is reported, and manufacturers are doing all that could be expected at this season. A slight weak-ening in prices is noticeable, however, and buyers of large lots can, no doubt, obtain concessions from the following rates, which are quoted for small lots:

Common Sheet, No. se to ss. 45
Best Refined 1/4 / 26 / 46 advance on the above.
Best Bloom Sheets, No. se to ss. 7
Best Bloom Sheets, No. se to ss. 63
Best Bloom Galvanised, discount. 30
Second quality, discount.

Bar Iron .- The demand is fair, and if the roads were in reasonably good condition it is believed that a large business could be done. The difficulty of moving around shuts off a great deal of business, however, which is being sensibly felt at the mills. Storekeepers report an active demand, and as stocks are being used close up, a very active business is looked for toward spring. We hear of two or three orders having been taken in lots of 400 to 500 tons each, and several of 100 to 200 each, but as the mills several of 100 to 200 each, but as the mills are running full time, there is sharp competition when desirable orders are placed on the market. The base price is held at 2.4¢, but it is intimated that concessions have been made in some instances, and the market is more in favor of buyers than it was in the earlier portion of the month. Skelp ld in lots of 200 to se each at about 2.4¢, which is the usual asking rate.

Steel Rails.-The demand continues to be very active, and prices are slightly in sellers' favor. The only sale of importance that can be mentioned is one of about 15,000 tons to the Indianapolis, Bloomington and Western Railway, and quite a number of smaller transactions. For American Rails about \$60, at mill, is the general quotation, subject to concessions, if terms of payment and deliveries are made convenient to the Under reverse conditions, prices would probably be quoted higher; in fact, \$62.50 has been quoted within the past week. Foreign Rails are constantly under negotia-tion, but we have not heard of anything having been definitely closed. We hear that £6. 10/—equal to \$62.50 @ \$63—at tide, is quoted, with sales mentioned of a lot in store on private terms. With the advance in Bessemer Iron, and a more urgent demand expected for Rails toward spring, higher prices seem to be more than probable.

Steel Blooms,-No sales have been offected this week, although buyers are in the market for large quantities. Prices are too irregular and feverish to permit of business being done, and quotations of £6. 15/@ £7, c. f. i., are almost nominal. The Bessemer

tions in foreign Rails. In course of the next three or four weeks, a large amount of business is likely to be placed, as the in-\$48 for 56s; \$48 @ \$49 for 35s and 40s; and \$50 @ \$52 for 25s and 16s. It is not im-probable, however, that slight concessions

Spikes-Are held firmly at \$2.75, but for lots of 1000 kegs or over it is not unlikely that concessions of 5¢ to 10¢ per keg might be obtained.

Old Rails .- Holders are very firm, and sales during the week have been at higher rates than during the previous week. A sale was reported some days ago at \$28.75 in store, but since then \$28.50 appears to have been the rate for 500 or 1000-ton lots. In many cases they are held at \$29 and up-ward, but buyers appear to be very indifferent about taking anything at over \$28. The position is in all respects unchanged since last week, although if buyers of new Rails meet the prices asked, it is not unlikely that proprietors of rolling mills may cover their ntracts by purchases of equal quantities of d Rails. The matter is likely to be fairly put to the test within the next 15 or 20 days. The market may be quoted firm at \$28.50 @ \$29 for Flanges, and \$30 @ \$31 for Doubles Buyers offer 50¢ to \$1 per ton less money, and, as yet, are not prepared to meet the full advance demanded.

Scrap Iron .- The market is very firm, Scrap Fron.—The market is very min, and quotations of last week are fully maintained. Wrought may be quoted \$28 @ \$30; Cast, \$20 @ \$21; Stove Plate, \$15.50 @ \$17; Steel Ends, \$30. Best qualities are strongly held at outside quotations.

Nails.-The market is steady at \$3, less 10¢ per keg to buyers of large lots.

#### PITTSBURGH.

Office of The Iron Age, 77 Fourth Avenue, PITTSBURGH, PA., Jan. 25, 1881.

Pig Iron.—There has been no important Pig Iron.—There has been no important change in the position of the market since our last report. The firmness noted for some weeks past still continues, and the extreme views of furnacemen recently has had a endency to restrict business, while consumers generally have been free buyers for several weeks past, and some of them have bought enough to last them from one to e months. They continue to buy all desirable lots that they can obtain thin the range of our quotations, from nich it is evident that they are apprehen-re of higher prices, notwithstanding the we of higher prices, notwithstanding the assatisfactory condition of the market for nanufactured goods. The offerings, especially of desirable grades of forge, are light, and they are only to be had at extrementes, while the poorer qualities are notwanted, although they, too, are sympathizing with the former. At the prices of last nonth there would be no difficulty in placing arge quantities, especially for future devery notwithstanding, as already intigated future wants from one to three months. In word, the trade have about concluded word, the trade have about concluded a word, the trade have about concluded that prices will be no lower for several months to come. Forge Irons from native or a may be quoted at \$22 @ \$22.50, 4 ms., for Neutral; do. from Lake Ores, \$22.50 @ \$23; all Ore Red-short, \$26 @ \$27; Bessemer, \$27.50 @ \$28.50; Eastern Codd-Blast, \$38 @ \$40; Hanging Rock do., \$40 @ \$45. according to brand @ \$45, according to brand.

Ores .- There is nothing new to note, exting that the impression appears to be ning gound that Lake Ores are almost certain to rule as high this year as last. The indications are that the demand for actual in to rule as high this year as last. The oldications are that the demand for actual dications are that the demand for actual Mr. Washburn, of the firm of Washburn & Moen Mfg. Co., who has been here for the past two weeks, began issuing licenses on apperior region, estimated by some well-in-

sumers are apprehensive of higher prices soon, in view of the enhanced cost of raw Iron, with no prospect of cheaper fuel or labor. Merchant Bars are pretty generally held now at 2.25¢ rates, 60 days, 2 per cent. off for cash, although a very desirable order for near-by delivery might still be placed at 2.15¢. Sheet Iron is quotable on a basis of 3.75¢ @ 3.85¢ for No. 24; Tank Iron, 2.90¢ @ 3¢; Skelp, 2.25¢ @ 2.35¢; Hoop 3¢ @ 3.10¢. Discount on best bloom Galvanized Iron 40° do refined 50°.

willing to make concessions of, say, 10¢ @ will be revoked. The feeling among 12½¢ per keg from the card, which they are the trade here is very satisfactory refusing to do. We repeat former quotations, \$2.85, 60 days, with an abatement of per keg on car load lots, and 2 % off for the manufacturers. We understand that

Wrought Iron Pipe.-There is a very fair business for the season, and the outlook is regarded as being favorable for a big spring and summer trade. The consumption is steadily increasing every year. Discounts on gas and water pipe remain unchanged at 65 to 67 ½ %; Boiler Tubes, 40 % off; Oil Well

Scrap.—There is an increasing demand. and while prices are not quotably higher, they are decidedly firmer, and some kinds business is likely to be placed, as the inquiries are from good buyers, and for large lots. The asking rates to-day are \$46.50 & \$29 @ \$30 ? net ton; Old Car Axles, \$38 \$48 for 56s; \$48 @ \$49 for 35s and 40s; and \$50 @ \$52 for 25s and 16s. It is not improbable, however, that slight concessions would be made for large lots and prompt cash. English Rails are quoted \$44 @ \$45, delivered at tide.

Salk as Are held firmly at \$2.75 but for sharp advance. sharp advance

Window Glass .- At the recent meeting of manufacturers in Chicago, new rates of discount were established, while the card was not disturbed. The new discounts are as follows: Car-load lots, double thick, 70 and 10 %; single ditto, 60 and 20 %; than car-load lots, double thick, 70 and 5%; ditts single thick, 60, 10 and 5%.

Coke .- The demand is increasing, and but for the inadequateness of rail transporta-tion the volume would be much larger than it is. Prices are decidedly firmer, and while we contine to quote at \$1.50 @ \$1.75 for ton on cars at ovens, some operators are refusing to accept less than the outside quotation. In view of so many pig-iron furnaces being in blast, the consumption is large and increasing, as many furnacemen are using Coke in place of coal.

#### CHICAGO.

Office of *The Iron Age*, 36 and 38 Clark Street, cor. Lake Street, CHICAGO, Jan. 26, 1881.

their entire product for the next two or three months, beyond which they do not care to quote in the present condition of the mar-ket. We hear of a sale being made of 800 tons Lake Superior Charcoal Nos. 2, 3 and 4, at \$33.50, delivered. We quote Lake Supe-4, as 35.30, terrorical Nos. 1 and 2 at \$32; Lake Superior Charcoal Nos. 4, 5 and 6 at \$34; Sootch imported (according to brand), \$27@ \$28; Scotch American (according to brand), \$25 @ \$28; Anthracite, \$23,50 @ \$25; Coke, \$25 @ \$27; Silvery, (soft) \$23 @ \$25.

Rails,—Makers of steel rails have contracted so far ahead that \$60 @ \$65 for present delivery are merely nominal quotations. Current quotations for Iron Rails are \$49@ \$51; some brands are held at even higher

Manufactured Iron.-The market for Manufactured Iron is firm and active, quotations for Bar Iron remaining steady at \$2.50, for ordinary orders, and \$2.40 for car-load lots. Sheet, from No. 10 to 14 guage we quote at \$3.40, 10 cents off for large lots. Tank, same as sheet, \$3.40, with 10 cents off for large lots. Hoop, \$3.20 @ \$3.30.

Nalls .- The market for Nails continues moderately active, prices remaining firm at \$3; with the usual discount of 10 cents off or car-load lots and 2 % for cash.

Scrap Iron.-Market stiff and demand Strap 1709.—Market stiff and demand steadily increasing, with indications of an advance in prices generally within the month. We quote Wrought No. 1, \$26; Forge Scrap, \$32; Heavy Cast, \$21; Stove Plates, \$16.50.

A bold and daring robbery was committed at the office of the Union Iron and Steel Co. on Ashland avenue, Sunday evening, 23d inst., which was the work of skillful burg-lars. The amount stolen was \$11,000. The lars. officials of the company have offered a re-ward of \$1500 for the arrest and conviction of the robbers.

Superior region, estimated by some well-informed authorities at 2,225,000 tons, and there are no other ores available to come incompetition with them for the present; this being the situation, it is not strange that the narke is strong. It is stated that some contracts have already been made at last year prices for delivery this year.

Manufactured Iron.—There is no abatement in the inquiry, and manufacturers could confill their order books if they were willing a accept bottom prices of a few weeks ago. It is very evident that both jobbers and consumers are apprehensive of higher prices son, in view of the enhanced cost of raw capacity toward the total amount of con-sumption, which it is estimated will be about tons during the current year, each bob tons during the current year, each nufacturer being required to pay from 50¢ bob 2 foo lbs. upon all Barbed Wire manctured within the past two years. The ensee is required each month to make a ull and correct report to the licensors, uring the full term of the license; the numr of pounds made, number of pounds sold, bef of pounds made, number of pounds sold, alto, names and addresses of all parties to whom sales have been made, and to properly label each and every bundle of Barb Wire made or sold, with the terms of license that continues firm, with considerable inquiry, and manufacturers would have no difficulty in making large sales if they were willing to make concessions of say and will be given 30 days' notice, at the expiration of which time their license willing to make concessions of say and will be given 30 days' notice, at the expiration of which time their license willing to make concessions of say and will be given 30 days' notice, at the expiration of which time their license will be given 30 days' notice, at the expiration of which time their license will be given 30 days' notice, at the expiration of which time their license will be given 30 days' notice, at the expiration of which time their license will be given 30 days' notice, at the expiration of which time their license will be given 30 days' notice, at the expiration of which time their license will be given 30 days' notice, at the expiration of which time their license will be given 30 days' notice, at the expiration of which time their license will be given 30 days' notice, at the expiration of which time their license will be given 30 days' notice, at the expiration of which time their license will be given 30 days' notice, at the expiration of which time their license will be given 30 days' notice, at the same and addresses of all parties to whom sales have been made, and to properly label each and every bundle of Barb Wire made or sold, with the terms of license will be given 30 days' notice, at the same and the sam no license will be granted to parties not having patents of their own that are valid. It is expected to complete arrangements with most of the principal firms in about a week or ten days. The following is a list

of manufacturers who do not require a license, they having patents that do not conflict with those controlled by the licensors: Messrs. H. B. Scutt & Co., Joliet, Ill.; Messrs. I. L. Ellwood & Co., DeKalb,

lots, not less than 10¢ 7 lb. To railroad at \$23 @ \$24; Eglinton at \$22; and Middlescompanies, 7 % \$\phi\$ B.

Note.—The above prices are for Barb

Fencing composed of two or main Wires. Barb Fencing composed of a single main Wire may be sold at if ? It less than above prices. Galvanized Barb Fencing shall be sold at not less than 1¢ ? It more than the above prices. Terms of payment, cash in 60 days from date of each invoice; or from average date of invoices, 2 % discount for cash may be made when paid in or within ten days from date. Terms of de-livery: The above prices are free on board at Worcester and Boston, Mass.; New York City and Buffalo, N. Y.; Cleveland, Ohio, and Chicago. Railroads may be sold free of freight at the point on the railroad so sold nearest to any of the points of free delivery named above. named above.

WASHBURN & MOEN MFG. Co. I. L. Ellwood & Co. and their licensees must make the freight to any buyer the same as from the nearest point of free delivery, as named above, to said bover.

SPECIAL NOTICE TO LICENSEES.

Any instance of selling Barbed Wire, on or after the date of license, at less price or prices, or on more favorable terms of payment or of delivery, than are named above will be a default on the part of the license under his or their license; but a special arrangement can be made with the licensors by which orders received and legally ac cepted and agreements entered into by the licensee before the date of his or their licensee before the date of his or their license, can be filed and carried out without such default on the part of the licensee.

#### CHATT-ANOOGA.

Office of The Iron Age, Market and 8th Sts., } CHATTANOOGA, Jan. 24, 1881. { General trade has been active during the st week, in spite of very muddy streets and roads. The weather has also been exceedingly unfavorable for outdoor opera-tions; but, with all these drawbacks, trans-actions and shipments have aggregated very

Pig Iron.-The sales of Pig in all grades are fully up with the product. Stocks are not accumulating. In No. 1 Foundry the supply is still short of the demand, although heel Metal, \$38 @ \$40.

Miscellaneous Articles.—The extreme old has been succeeded by very wet eather, and track renewals have not processed much for several weeks. This has ept Old Rails pretty stiff, owing to light aupply. Other articles in this list are fairly teady? We quote: Old Rails at \$26 @ \$28; Wrought Scrap, \$20 @ \$24; Cast, \$15 @ \$17; Old Wheels, \$28 @ \$30.

Ores.—We quote: 50 % Brown Hematite per ton, \$2 @ \$2.75; Red Fossil, \$2 @ \$2.25 Nails.—There has been a slight weaken-ing in the price of Nails, though not enough

to justify any change in quotation. The de mand has rather improved.

Manufactured Iron.—Bar is quiet and firm at \$2.35; Railroad Spikes, \$3; Track Bolts, \$4; Trestle Bolts, \$4.50; Fish Plate,

Coal.—The market for Lump is not as stiff as it was, though prices have not been much modified. Best Lump, in Atlanta, brings \$10 % ton, and proportionally higher prices further South. Chattanooga pays now about 22¢ p bushel, delivered, for choice household Coals. There has been no change in manufacturers' prices.

Coke.-Furnace Coke, \$3 per ton at furace; Foundry, 10¢ @ 12¢ per bushel.

Steel and Iron Rails.—We quote: Steel Bars at \$62.50 for American makes, \$60 for foreign. Iron, \$48 @ \$50; Small T is firm at \$55.

Lead.-We quote: Pig Lead, 41/2 @ 5 . Steel.—Plow Slabs, 3 in. and under, \$4.70; Black Diamond, ordinary sizes, 13¢.

#### CLEVELAND.

use, and a large number of odd lots and remnants have been closed out. It is now apparent that most, if not all, of the principal companies which find a market here for their Ores will ask the same prices as for their Ores will ask the same prices as those obtained last season, and some of those whose ores were introduced last season and proved desirable, will probably obtain even better figures than last year. Pig Iron.—The demand for Pig Metal continues to be large, without affecting prices in any way. Considerable fecting prices in any way. Considerable sales been made during the past week, at prices about as quoted, viz.: Foundry Iron, \$23 @ \$25; Mill Iron, \$20 @ dry Iron, \$23 @ \$25; Mill Iron, \$20 @ \$23. Charcoal Wheel Metal is in excellent demand, with prices very firm at \$33 @ \$35 here. Bessemer Pig is held firm, most of the furnaces being sold up for present delivery, and refusing to name prices for the future. Bar Iron.—Manufactured Iron of all kinds is a trifle weaker. The mills are future. all very busy, but prices are not as firm as we were able to report in our last. Owing to large purchases having been made and present needs fully provided for, the mills are not buying Scrap Iron, and that branch is also weaker than a week ago.

#### BOSTON.

Casing, 72¢ per foot, net; do., Tubing, 22¢ steel.—There is an increasing business, the mills generally being pretty well supplied with orders; prices are are firmer, but an changed, best brands of Rosined Cast Steel, 7¢; Bescaped on Deliveries are generally required at continuency, 5¢ and open-learth Machinery, 5¢ and open-learth Mac

borough (Clarence) at \$18 @ \$19. Old Rails are firm at last week's advance, and there have been further sales at these figure nave been further sales at these figures. We quote American Rails at \$32 @ \$33, and Foreign Rails at \$30 @ \$31 for D. H.'s and \$29 for Tees. Manufactured Iron.—Bar Iron does not respond roadily to the advance in Old Rails. In fact there has been a good deal of "cutting" in prices at the West. We quote Bar at \$2.25. Norway and Sweigh at \$4.55 for Norway. and Swedish at \$4.15 for Bars and \$5.15 for Shapes. Nails at \$2.85 @ \$2.90 ?? keg for rod to 6od. Plates are in fair demand at Shapes. Name at \$2.55 (@ \$2.90 {? keg for rod to God. Plates are in fair demand at \$2,90 @ \$3 for Common and Tank; \$3.20 @ \$3.37½ for C. No. 1; \$3.50 @ \$3.62½ for C. H. No. 1 Shell; and \$4.62½ @ \$4.75 for C. H. No. 1 Flange; and 6½ for Bay State X Flange for fire boxes, &c. Copper has been moderately active and firm at 19¼ for Lake, and sellers are inclined to hold at the latter figure. The jobbing price of Lake is 19½ for @ 20¢. There has been no change in the combination prices of Manufactured Copper. We quote: New Sheathing Copper, 26¢; Braziers, 28¢, and Bolts, 28¢; Bottoms, 31¢; American Yellow Sheathing Metal, 17¢ (@ 18¢; Yellow Metal Bolts, 20¢; and English Yellow Metal Sheathing, 14¢, in bond. Lead appears to be a shade easier, and it is intimated that 4½ for will purchase round lots. Smaller lots command 5¢ (@ 5½¢. The prices of manufactures are unchanged, as follows: Bar 6½ for Price for the first command 5¢ (% 5½ for Treiter). of manufactures are unchanged, as follows:
Bar,  $6/2\phi$ ; Pipe,  $6/2\phi$ ; Sheet,  $7\phi$ ; Tin-lined
Pipe,  $15\phi$ ; Tin Pipe,  $40\phi$ ; all less 10 % to
the trade. No. 1 Solder,  $11/2\phi$ . Spelter
has ruled in fair demand and firm at  $5/2\phi$ for Remelted. Retail lots command %\$\phi\$ @ \( \frac{1}{2} \phi \) & above these figures. Sheet Zinc is quiet at \( 7\phi \) @ \( 7\frac{1}{2} \phi \). Tin has shown no improvement, and round lots of Straits are obtainable 19\( \frac{1}{2} \phi \) and jobbing parcels at 20\( \phi \). Tin Plates have continued quiet, and the demand is moderate and supplies ample. We quote large lines, ordinary brands, per box: Charcoal Bright, \$6 @ \$6.25; do. Ternes \$5.37½; Coke Tin, \$4.90 @ \$5. and do. Ternes, \$4.90 @ \$5.—Commercial Bulletin.

#### LOUISVILLE.

Messrs. GEO. H. HULL & Co., Comare fully up with the product. Stocks are not accumulating. In No. 1 Foundry the supply is still short of the demand, although the market for that grade has got easier in quotable change in the market during the since the opening of the new year. We quote: No. 1 Foundry, \$25 @ \$27; No. 2 Foundry, \$23 @ \$25; Gray Forge, \$20 @ \$22; White and Mottled, \$18 @ \$20; Car per our last quotations, which are for cash, namely:

| mattery.   |
|--|
| FOUNDRY IRONS.   |
| No. 1 Hanging Rock, Charcoal \$27.00 @ 28.00 No. 2 26.00 @ 30.00 No. 1 Southern, Charcoal \$25.00 @ 26.00 Mo. 2 10 0 0 25.00 @ 27.00 |
| No. 1 Hanging Rock, Stonecoal and Coke 23.50 © 25.00 No. 2 Hanging Rock, Stonecoal and   |
| Coke   |
| "American Scotch"  |
| WILL TROSE   |

No. 1 Charcoal, Cold-short and Neutral \$22.00 @ 24.00
No. 1 Stonecoal and Coke, Cold-short and Neutral 25.50 @ 22.50
No. 2 Stonecoal and Coke, Cold-short and Neutral 20.50 @ 21.50
No. 1 Missouri and Indiana Red-short. 26.00 @ 21.50
No. 1 Missouri and Indiana Red-short. 26.00 @ 27.00
Neutral 19.00 @ 20.00

CAR WHEEL AND MALLEABLE IRONS. 

W. B. BELKNAP & Co., Iron and Steel W. B. BELENAP & CO., 1701 and Steel Merchants, Nos. 113 and 115 Main street, report to us as follows, under date of January 22: Bar Iron is very firm on advices from Northern and Eastern Mills. Southern Mills, owing to increased facilities for production, and limitation of immediate consumption en account of unfavorable weather, are offering more inducements to good buyers. It is a step in the progress of the South, and gives assurance of an abundant Iron supply for this part of the country at last. Demand for heavy Sheet is good, and an advance of \$2 \$2 ton may be fairly quoted. Nails are well held at last advance, and very scarce, as boats have not begun to JANUARY 24.—Iron Ores.—There has been an active demand recently for Ores suitable for "fixing," and this market is now almost bare of such Ores. There has also been a is held at 5¢ for job lots in this market. considerable inquiry for Ores for furnace The weather is still most depressing, cold and wet, and among the crops demanding attention are the crops of failures in that part of the Southern country where so much cotton has been lost and destroyed

#### ST. LOUIS.

Messrs. Hoffer, Plumb & Co., Pig Iron and Iron Ore Merchants, 417 Pine street, write us as follows, under date of January 22: There is a good demand for Iron in small lots, and every indication promises good business during the coming months.

| BUT BLAST CHARCOAL,         |   |
|-----------------------------|---|
| Missouri, No. 1             | 25.00 @ 26.00                                   |
| COKE AND COAL.              |   |
| Missouri                    | 27.00 @ 28.00<br>25.00 @ 26.00<br>26.00 @ 27.00 |
| MILL IRONS.                 |   |
| Cold-short                  | \$2.00 @ 23.00<br>25.00 @ 26.00                 |
| CAR WHEEL IRON.             |   |
| Missouri                    | 30.00 @ 35.00<br>35.00 @ 38 00<br>35.00 @ 45.00 |
| ORE.                        |   |
| For fix, nominal            | @   |
| R. L. COLEMAN & BRO., Fourt |   |

|                       | FOUNDRY IRONS.          |         |     |       |
|-----------------------|-------------------------|---------|-----|-------|
| Hanging Rock          | Charcoal No. 1<br>No. 2 | \$29.00 | 0   | 30,00 |
| 4.4                   | Coke and Stonecoal      |         | (6) | 29.00 |
| No. 1<br>Hanging Rock | Coke and Stonecoal      | 25.00   | 0   | 26.00 |
| No. 2                 |                         | 25 00   | 00  | 25.00 |

| Southern Charcoal and Coke<br>Missouri "" Silver Gray | No. 1.  | 26.00 @<br>26.00 @<br>22.50 @ | 27.00 |
|---|---------|-------------------------------|-------|
| MILL IRON   |         |                               |       |
| No. : Cold-Short and Neutral<br>No. : Red-Short       |         |                               |       |
| CAR WHEEL AND MALL                                    | EABLE I | RONS.                         |       |
| Hanging Rock Cold Blast<br>Warm Blast                 |         | 42.00 @                       |       |
| Lake Superior   |         |                               | 38.00 |

#### RICHMOND.

Mr. ASA SNYDER, Iron Merchant and Fur nace Agent, writes as follows under date of January 24: The market continues firm at quotations with an advancing tendency.

| Scotch Pig Iron                    |               |
|------------------------------------|---------------|
| American Scotch Pig Iron           | 27.00 @ 29.00 |
| No. 1                              | 25.00 ( 25.00 |
| No. 2                              |               |
| No. 3                              | 21.00 @ 23.00 |
| Mottled and White                  |               |
| Virginia Charcoal C. B. Wheel Iron | 38.00 @ 41.00 |
| Old Rails                          | 26.00 @ 28.00 |
| Old Wheels                         |               |
| Wrought Scrap, No. 1               | 22.00 ( 25 00 |
| Cast, Machinery Scrap              |               |
| Richmond Refined Bar Iron          |               |
| Horse Shoes, Tredegar              |               |
| Mule "                             | 64. 5.00      |

#### BALTIMORE.

W. N. WYETH, Iron and Steel Merchant, 46 and 48 South Charles street, reports us the following, under date of January 24 Trade continues ruling firm, with every in dication of a prosperous business during the

| product your.   |
|---|
| Ref. Bar Iron, 1 to 6 by 14 to 1 9 \$2\frac{1}{2} @ 2\frac{1}{2} \\ 1 |
| and Square  |
|   |
| Band Iron from 14 to 4 in wide. " 2 @ 246                             |
| Horne-shoe Iron " 31/ 20 4 0  |
| Norway Nail Rods " 6% @ 6% 6  |
| Black Diamond Cast Steel " 13% @14%                                   |
|   |
| Machinery Steel 9 9 9%f   |
| Cast Spring Steet 0 up 5/4  |
| Common Horse Nails 10 @ 14 f  |
| Perkins' Horse shoes, W keg of 100 lbs \$4.37 1/4                     |
| " Mule shoes 5.37½  |
|   |
| 20 9 8 7 6  |
| Putnam Horse Nails B b az az az az a4 a64                             |
| Globe Horse Nails 10 10 20 21 22 23 25#                               |
| Railroad Spikes   |
|   |

#### CINCINNATI.

JANUARY 24.—Pig Iron.—Inquiries for both Foundry and Forge during the past week have led to some considerable sales for present and future deliveries. Prices remain firm at about the following quotations:

| No. z Charcoal Foundry             | \$26.00 @ 27.00 |
|------------------------------------|-----------------|
| No. 1 Coke Foundry                 | 24.00 @ 25.00   |
| No. a Coke 4                       | 22.50 @ 23.00   |
| No I Bituminous Foundry            | 22.00 @ 22.50   |
| No. 1 Bituminous Softeners, Foun-  |                 |
| dry                                | 20.50 @ 21.50   |
| Nos. r and 2 Bituminous Coke Forge | 20.00 @ 22.50   |
| Nos. 1 and 2 Charcoal Forge        |                 |
| No. 1 to 6 Charcoal Cold Blast Car |                 |
| Wheel                              | 38.00 @ 40.00   |
| Manufactured Iron (market active)  |                 |
| card rate                          | 2.20 @ 9 30     |
|                                    |                 |

### Our English Letter.

Review of the British Iron, Steel, Metal and Hardware Trades.

(From our Regular Correspondent.) LONDON, ENG., January 10, 1881.

THE OUTLOOK has decidedly not become duller and more cheerless since the date of my last letter; indeed, it would be quite within bounds to say that in several particulars most of our metallurgical markets have made a clear forward movement, and have planted themselves on the first stage of that incline which we are popularly supposed to be about to ascend. Certain it is that there is an air of strength and vivacity in almost all direc-tions which is difficult to be accounted for save on the supposition that the men of iron have arrived at the conclusion that they "have the aces up their sleeves," and can play them whenever they think fit. The unanimity of opinion in favor of a speedy and vigorous revival is little less than wonderful. All the persistent pessimists who bothered us so obtrusively a short time ago with their unwelcome statistics and Cassandra-like croakings have disappeared, and I have not heard a single dissentient voice throughout the whole chorus of the past couple of weeks. One can scarcely presuppose a concerted unanimity of opinion of the control of the contr ago with their unwelcome statistics and suppose a concerted unanimity of opinion of this size and weight; yet, were the thing at all possible, I think I should be strongly inclined to set the affair down as a clever and well-worked movement directed in the ultimate interests of a clique of speculators. It is impossible, however, to entertain this impression seriously. The facts won't stand the strain, and one is forced to the conclusion that the optimism of the moment is a genuine feeling, and one which is very largely based on facts and figures that cannot possibly be argued away. You will understand, of course, I don't wish to argue them out of existence; but you will not unreasonably or inaccurately infer that I do desire to give you the bottom facts as near as I can excavate them on your behalf They are just as I have given them you now and of late. I believe the change, such as it is, is quite genuine—founded on the existence of an improved demand from existence of an improved demand from home and external sources; on visible ac-tivity at the furnaces and rolling mills, and backed up by a free current of inquiries and orders. It is further supported by the home and external sources: on visible activity at the furnaces and rolling mills, and backed up by a free current of inquiries and orders. It is further supported by the renswed activity of the metallurgical industries of the Continent of Europe, and is not unmindful of the possibilities of the United States, should all that has been written and prophesied be realized. So far no great amount of speculation has crept in, what has been done in that line having been principally performed at Glasgow, where it is as natural to peddle in pig iron as it is to drink near whiskey! In Scotland the makers themselves evidently feel well, as is evinced by the augmented quotations they have put forth within the past few days. They are not unlikely, also, to have new labor troubles shortly. No doubt the speculative day (of retribution) will come, as the Thespians put it, yet I assume the date is not then there may be ample opportunities for "ingh old jinks." Middlesboro and the kern's stocks, 196,021, and in public stores, "high old jinks." Middlesboro and the kern's stocks, 196,021, and in public stores, "high old jinks." Middlesboro and the kern's stocks, 196,021, and in public stores, "high old jinks." Middlesboro and the kern's stocks, 196,021, and in public stores, "high old jinks." Middlesboro and the kern's stocks, 196,021, and in public stores, "high old jinks." Middlesboro and the kern's stocks, 196,021, and in public stores, "high old jinks." Middlesboro and the kern's stocks, 196,021, and in public stores, "high old jinks." Middlesboro and the kern's stocks, 196,021, and in public stores, "high old jinks." Middlesboro and the kern's stocks, 196,021, and in public stores, "high old jinks." Middlesboro and the kern's stocks, 196,021, and in public stores, "high old jinks." Middlesboro and the kern's stocks, 196,021, and in public stores, the current of the metallural account are spoken of as being likely been in good requests. The year has a stock the stock of the class the peace in good requests, with some addition,

Cleveland districts, of which it is the capital, are fully employed, with no great increase in stocks of crude iron, and general cheerfulness all around. It is agreed that no year ever began so well or with such bright prospects in Cleveland as has 1881. What is more to the point is the activity of the majority of the works and the crowded condition of many of the order books. Elsewhere the smelting furnaces and rolling mills are doing a more or less liberal business, but many of the manufacturers yet complain of the relatively unre-munerative rates at which they are conducting matters. I think it is decidedly true of most kinds of merchant iron, although I scarcely think it applies to heavy manufactured iron for engineering, railway bridge building, or other cognate uses. The Staf-fordshire makers have a large share of the merchant iron trade, especially as regards the commoner sorts, and they have long been most indifferently engaged. There are too many of them in the trade, and their competition is correspondinly savage. In common parlance they "cut their own throats," and benefit nobody gave certain ingenious consumers in their own neighbor-hood. In many departments of trade outside their own immediate vicinity, they are almost entirely cut out by the foreign, north country, and other makers—partly because of their distance from the seaboard and party by reason of their too-obstinate adherence to old-fashioned plant and ways of working. Hence there is more competition to-day in the merchant irous than in any other branches of the iron or steel trades. How long it will endure is, of course, wholly problematical. Just at present the approach of quarterly meetings is somewhat hushing the strife. From various more or less ably compaid annual reviews and current circulars, &c., you will doubtless be enabled to gather pretty full accounts of what some of our wise ones think of the situation and matters in general; hence I will not pursue the theme further than to place it on record that I shall not be From various more or less ably rised to witness a rapid "run up" of markets almost immediately. As I write steel rails are very firm, business being reported in 40 h and the like sections at £6. 12/6, and 60 to 75 h lots at £6. 7/6 @ £6. 10/. Inquiries are said to be numerous and further advances almost certain. Iron rails are steady at £5. 2/6 @ £5. 7/6, with some sales in South Wales on South American, &c. account, but no great rush of orders. Welsh bars are firmer at £5.2/6 @ £5.5/, and Staffordshire marked bars at £7. 10'. Old rails are in improved request and holders are firmer in their demands, under the impression that a new call from your side and other conditions may shortly favor a quick and urgent rise. Of wrought favor a quick and urgent rise. Of wrought scrap little is on offer and prices are strong in consequence, up to £4 and £4.5/. Old spring steel is in fair request up to £5. 10/. Old railway chairs at any price between 40/ and 46/. Bessemer blooms 7 x 7 inches and upwards are scarce and stiffly held by producers at from £5. 10/ to £6. 2/6 per ton. These are certain to go up before long, in my epinion. my opinion.

SCOTCH PIG IRON

has made a decided advance within the week, and the market is now firm and tendweek, and the market is now firm and tend-ing upward, both as regards warrants and makers' own brands. This tendency is ren-dered the more marked by reason of an agi-tation among the ironworkers and miners for increased wages. According to the sta-tistics issued by John E. Swan & Bros. (Limited), there are now 118 furneses blow. (Limited), there are now 118 furnaces blowing in Sootland, as against 101 this date last year. The former total includes eight on hematite iron. In Connal's stores there are 501,184 tons of pig iron, an addition of 3466 tons last week, and an increase of 76,000 tons last week, and an increase of 75,000 tons over the quantity stored a year ago. Last week's shipments were about 100 per cent. in comparative advance and were good for the season of the year. Ballast pig is now 47/ alongside ship. Cleveland pig is now 47/ alongside ship. Cleveland iron imported into Scotland is on a smaller scale at present than at the beginning of 1880—last week's figures being 6055 tons. Writing from Glasgow, January Sth, James Watson & Co., said: "The Scotch iron market has been firmer this fluctuated between 53/3 and 52/11, while yesterday it was firmer with business from 52/11 to 52/3½ per ton. To-day it has been a degree better with a limited business transacted from 53/3 to 53/5, cash, closing buyers at 53/3, sellers at 53/4 per ton. The shipments last week were 10,228 tons, as compared with 6677 tons for the corresponding week of 1880." We quote:

|                   |            |       | No. 1. | No. 3. |
|-------------------|------------|-------|--------|--------|
| G. M. B., at Glas | sgow       |       | . 53/6 | 51/6   |
| Gartsherrie, at   | Glasgow    |       | . 03/  | 54/    |
| Coltness.         | 88         |       |        | 54/    |
| Summerlee,        |            |       |        | 53/    |
| Langloan,         | 6.6        |       |        | 53/6   |
| Carpbroe,         | 61         |       |        | 53/6   |
| Calder,           |            |       | . 02 6 | 34/6   |
| Glengarnock, at   | Ardrossar  | a     | . 57/0 | 54/    |
| Eglinton,         | 6.6        |       |        | 51/6   |
| Dalmellington,    |            |       |        | 51/6   |
| Shotts, at Leith. |            |       | . 63/  | 54/    |
| Kinneil, at Bo'no | 088        |       | . 53/6 | 51/6   |
| Carron, at Gran,  | gemouth    |       | . 54/6 | 53/    |
| The Clyde sh      | ipbuildin  | g var | ds are | almost |
| without excep     | otion full | y emp | loved. | Other  |

orders on French merchant and English naval account are spoken of as being likely

|                       | ympathy with Glasgow,   |
|-----------------------|-------------------------|
| at the subjoined qu   | notations for G. M. B.  |
| net cash, f. o. b, ma | kers' wharves in Tees : |
| No. 1 Foundry 46      | Mottled 40/6            |
| B ** 44/              | White 40/               |
| 3 4 42                | Refined Metal 57/6      |
| 4 Wanna 41            | 6 Kentledge 42/6        |

147,735 tons—an increase of about 12,000 tons on the month. The make of Cleveland iron in 1880 was 2,510,853 tons, as against 1,781,443 tons in 1879 and 2,001,233 tons in 1874, when the production was supposed to have attained its acme of "prodeegiousness.

#### AT SHEFFIELD

business is fairly brisk, on the whole, most of the leading establishments being quite active and oversupplied with orders, while some of the smaller concerns still complain of the stagnation of trade. The iron and steel works are well engaged, the temporary interruption of operations at one large concern heaving had the effect of increasing the cern having had the effect of increasing the pressure in other quarters. At Steel, Tozer & Hampton's Ickles Bessemer Works new and improved plant is being set down, while John Brown & Co. and Cammell & Co. are also each amending their appliances. The creditors and shareholders of Brown, Bayley & Dixon have agreed to adopt a voluntary liquidation, under which the company will virtually undergo a process of financial reonstruction, carrying on its manufacturing construction, carrying on its manufacturing operations as heretofore. The company have a good future, provided they are relieved of their overload of original capital. The meetings of creditors and shareholders were kept "private and confidential" by arrangement. I hear that certain statements were made and recriminations emitted which would not have read well in print. ted which would not have read well in print. The rail mills of the neighborhood are all well employed, about 7000 tons of an Australian order, besides several other colonial and home contracts, having recently fallen to the younger houses in the trade. In one or two quarters a little anxiety is being expressed as to the possible course of hematite pigs in the near future. Stocks at the West Coast yards are reported to be quite light, and the current output well absorbed by im-mediate deliveries, so that those who have recently taken rail orders at prices ranging from £5. 10/ to £6. 5/ are anxious to cover themselves as regards purchasers of the raw materials. A rather notable example of the want of this precaution last ple of the want of this precaution last year is fresh in the minds of most persons in the trade, and possibly oper-ates as a wholesome reminder. The armor plate mills are tolerably engaged. The Wilson patent has, I understand, made hopeful headway with the French licenses. The lighter industries of Sheffield are gen-erally busy, and some few branches are re-markably pressed. Particulars of the transerally busy, and some few branches are remarkably pressed. Particulars of the transactions of the town and district with the United States have been published. They show that the total value in 1880 was £1,075,243, against £671,723. Steel last year was down for £398,263, compared with £220,509 in 1879; and cutlery, £255,855, against £178,042. A fair proportion of the increase took effect last quarter. In the South Yorkshire coal field around Sheffield a wages agitation is in progress, and some a wages agitation is in progress, and some of the colleries are not unlikely to be stopped, owing to the action of the men. It stopped, owing to the action of the men. It is not improbable that such a result would be welcome to many coal owners, as fur-nishing a pretext for that advance of quota-tions for which they wish so earnestly.

STAFFORDSHIRE AND BIRMINGHAM

are quiet as regards iron, the general attitude at the time of writing being one of expectancy as to the course to be adopted expectancy as to the course to be adopted by the ironmasters at the quarterly meetings, a few days henceforward. It is pretty well understood, however, that the principal houses will make no change in their list rates, notwithstanding the slightly reduced rate of wages resulting from the recently given arbitration award. This award the men seem indisposed to accept, besides which the miners are inclined to push their demands. Coupling with these considerations the almost unbroken buoy-Coupling with these ancy of the market reports and of the unanimous expectation of greater briskness, it is difficult to perceive on what grounds or in what manner a reduction could be carried out. The outcome of the meetings, however, will be known to you long before this letter achieves the honors of type, so that speculation here is almost useless. The edge-tool, chain and machinery industries of the Black Country and Birmingham are satisfactorily engaged, a few of the best houses being busy and freely sold ahead. At Wolverhampton and Birmingham the mis-cellaneous trades are not pressed with work, but the brass-foundry departmentstuting, probably, the chief industry of Bir-mingham—are doing a good turnover and have reasonably hopeful prospects. The tube drawers, chandelier makers, &c., have latterly had an excellent time of it, and several of the best manufacturers have car-ried over into the new year many unexecuted orders. You may, perhaps, be interested in learning that the English Watch Company, of Birmingham (working very much on the Waltham principles as regards machinery) have this year secured, in fair competition, the orders of the Indian state railways, in spite of the opposition of the Waltham and other leading American con-

#### FOREIGN.

#### FRANCE,

(Moniteur des Interets Materiels.)

the works. The Northern masters of forges have sold their entire production for sight the works. The Northern masses of the sold their entire production for eight months to come together,  $to_0,\infty$  tons. Coal.—Great heaviness is the characteristic of the Coal market among us, and prices droop; the return to cold weather would, however, change all this instantly. St. Etienne is shipping very little.

#### BELGIUM.

BELBHIN.

(Revue Universelle.)

Baussels, Jan. 9, 1881.—Iron.—The general aspect of the Iron market continues to be an improving one; the demand revives, and in various quarters new business is spoken of. We cannot, however, announce a downright advance of prices yet in the new year, but there is decidedly greater business. The demand for Pig Iron is active, and Sheet Iron is moving off at a satisfactory rate. We quote: No. 1 Merchant, 12,50; Beams, 13; Sheets, 16; English Pig. 5,75; Moulage Belgian, 6,25; Affinage ditto, 5,50; Steel Rails, 15 @ 16; Hoops, 23,25, and Axies, 23,25. The foreign demand for Italy, Spain and Roumania continues brisk; from the East also handsome orders are dropping in, but the most active purchaser in Belgian is France. We are glad to perceive this auspicious manguration of the new year, which is all the more encouraging and full of promise, as it is based on actual demand, and not on speculation as in January, 1880. At the same time this movement is started at really moderate prices, which hold out inducements to the consumer, for he is perfectly safe not to lose money on what he purchases upon the present reasonable basis, while a year ago the price had been run up considerably during the previous headlong speculation. The difference between the state of affairs then, when the crops had been bad, and the state of matters now, when crops have been fair, cannot escape even the casual observer. Metals are steady. We quote par 100 kilos, Copper, 162,50; Spelter, 42,50; Sheet Zinc, 59,50; Lead, 37,50; ditto Sheet, 33; Banca Tin, 269, and Billiton ditto, 425; 53 francs. Coal.—The cooler weather lends a little more firmness to the market. (Revue Universelle.)

#### GERMANY.

HAMBURG. January 6, 1881.—Iron.—There is every appearance at Dortmund that the improvement in the iron industry is bound to be a lasting one this time. The rising tendency for weeks past noticeable in the Pig Iron market has begun to spread to Merchant Iron. One of our rolling mills producing thin sheet Iron has raised its price 5 marks per ton, and from this circumstance it is safe to infer that ether works will follow suit. Merchant Iron is becoming more animated daily, and an excellent feeling begins to prevail with respect to the immediate future. Coal, on the other hand, does not improve at Dortmund, where the dulluess is being intensified. The tendency is a downward one, good mixed Coal being offered at 25 marks per 100 cwts. Should the cooler weather just setting in continue, however, a rebound may be at hand. Navigation on the Rhine has rather been stimulated by the high water. In the Moselle and Sarre region animation in the iron trade is making good headway. The Luxembourg-Lorraine Pig Iron syndicate asks more than 50 francs. Coal is inactive, the inundations checking transportation. In Silesia some dealers who did not want to buy Merchant Iron on the basis of 100 marks some six weeks since have now been compelled to enter the market, and sales have been effected at an advance. The government Coal mines have abandoned the idea of putting up prices, now that the mild weather has affected consumption. Metals—Have, on the whole, been quiet. Tin is firm and higher. We quote Banca and English Common, of © 100; ditto Refined, 102 204 marks per 50 kilos. Copper has been looking up. We quote Roeraas Rosettes, 74 @ 76; Swedish, 70; English Refined Ingots, 68 @ 69. Lead is unaitered. We quote Roeraas Rosettes, 74 @ 76; Swedish, 70; English Refined Ingots, 68 @ 69. Lead is unaitered. We quote English Pig, 17 @ 17.50; ditto Sheet, 17.50 @ 18, and German Pig, 12 20 15.50. There is nothing doing in Spelter, which may be quoted 16 marks per 50 kilos, spot and to arrive. (Borsenhalle.)

#### HOLLAND.

(Koch & Vlierboom.) ROTTERDAM, Jan. 7. 1881.—Tin.—Since the commencement of the new year this metal has become firmer, without, however, leading to more business of importance. From 55 guiders per 50 kilos. Banca has meanwhile risen to 56, and Billiton has improved to 55.50 guiders. Shipments from the Straits and Australia to England in December having been liberal, the metal at its ruling rate does not inspire much confidence.

#### AUSTRIA.

(Austrian Trade Journal.)

(Austrian Trade Journal.)

VIENNA, Jan. q. 1837.—Iron.—There is great firms ness noticeable in Pig Iron; we hear that several blast furnaces have sold shead their entire make for the first six months of the current year, and into deliveries cannot now be procured for less than 4.80 florins the 100 kilos. Among rolling mills we may mention that the Ternitz Works are busy in filling orders given the same by the Vienna Neustack Locomotive Works; the Ternitz concern has not yet resumed turning out Rails. The trade in Merchant Iron is still very quiet, and limited to filling immediate requirements. The business for the season in hardware is about ended; it has not been very brisk, but at any rate more so than last year. As for the demand for Rails for the spring now drawing near, it is becoming more evident daily that it will be considerable, and more so than in the spring of 1880. There are indications that the local demand for Rails alone will be more than double the amount of our late estimate. The Belgians have beaten our works in Italy at the adjudication there, in point of cheapness at the rate of 20 francs per ton with railroad material. There has been an improved demand for Iron here, without change in prices. We quote 18; per 100, 140, 25 florins; Merchant Iron, 105 (20 115; Sheets, 155 (20 185, and Pillars, 27; Tin, 119 (20 20, 50; Sheet Zinc, 26; Blue Vitriol, 28, 50 (20 21, 50; Spelter, 10, 20 20, 50; Sheet Zinc, 26; Blue Vitriol, 28, 50 (20 21, 50; Spelter, 10, 20 20, 50; Sheet Zinc, 26; Blue Vitriol, 28, 50 (20 21, 50; Spelter, 10, 20 20, 50; Sheet Zinc, 26; Blue Vitriol, 28, 50 (20 21, 50; Spelter, 10, 20 20, 50; Sheet Zinc, 26; Blue Vitriol, 28, 50 (20 21, 50; Spelter, 10, 20 20, 50; Sheet Zinc, 26; Blue Vitriol, 28, 50 (20 21, 50; Spelter, 10, 20 20, 50; Sheet Zinc, 26; Blue Vitriol, 28, 50 (20 21, 50; Spelter, 10, 20 20, 50; Sheet Zinc, 26; Blue Vitriol, 28, 50 (20 21, 50; Spelter, 10, 20 20, 50; Sheet Zinc, 26; Blue Vitriol, 28, 50 (20 21, 50; Spelter, 10, 20 20, 50; Sheet Zinc, 26; Blue Vitriol,

#### EAST INDIES.

(Rautenberg, Schmidt & Co.)

(Rautenberg, Schmidt & Co.)

SINGAPORE, Dec. 8, 1862.—Tin.—The general tendency in Straits produce during the past fortnight has been a rather dull one, in consequence of the uncertainty about shipping opportunities; but now that more vessels are due, the demand revives and better prices are asked. Tin has been little affected by these influences. It has been in lively request, and at one time \$29.25 per picul was reached with it, but the bulk of the transactions took place at \$28.50 @ \$29. The market now closes quiet at \$28.25. Exchange.—Six months' credit bills have risen from 3/9% to 3/9%, which is the closing rate.

(Gilfillan, Wood & Co.)

(Gilfillan, Wood & Co.)

SINGAPORE, Dec. 14, 1280.—Tin.—The buying for the United States is now less active, and recent transactions have been mainly for England. The price ranged from \$28.75 up to \$29 25, and back to \$28, at which there are now sellers. In all, about 300 tons nave been sold. Freights.—For New York the Visurgis has cleared and the Freeman Clark is a full ship. The Oneida has still room for a cargo. The David Brown has been taken for Boston on secret terms. There are no vessels on the berth for London or Liverpool. None of the ships fixed for arrival have made their appearance. Rates are nominally 45/@ 47/6 for dead weight. Shipments from the Straits settlements to the United States during the 11 months have been 137,615 piculs Tin, against 100,576 in 1879, 58,735 in 1878, and 58,043 in 1877.

(Schmidt, Kustermann & Co.)

#### The East River Suspension Bridge.

The announcement that within another year the East River Bridge will be com pleted and opened to traffic, gives interest to the following synopsis of the history of that undertaking, for which we are in debted to the World:

A few weeks ago several of the iron beams

for the roadway of the East River Bridge were hoisted up to the tower approach on this side of the river to test the hoisting machinery only, for there is no intention of beginning to lay the roadway until the early beginning to lay the roadway until the early spring. A hundred tons of these beams have been received, and by the time that it is proposed to begin the work, it is expected that there will be enough of them on hand to permit the work to be pushed without interruption. The officers of the company say that, without doubt, the bridge will be open for travel about January 1, 1882. The question of a bridge to unite the two cities was talked of as early as 1860, but did not take practical shape until five years later. take practical shape until five years later. The completion of the Niagara Suspension Bridge and the Covington and Cincinnati Suspension Bridge demonstrated the practi-cability of constructing a bridge of the span required to cross the East River, and in 1867 a company was formed, under a charter ob-tained April 16 of that year, and Mr. John A. Roebling, who had successfully completed the work of building the bridge over the Niagara River, was engaged to make the estimates for the proposed East River Bridge. His first report to the directors of Bridge. His first report to the directors of the company was made in September, 1867. In that report he discussed the question of location, the structure and the mode of pro-pelling cars across it, its practicability and strength, its towers and their foundations, the anchorages and approaches, and also estimated the probable cost and revenue. The cost he put at \$6,675,357, and in this con-nection he says in his report: "The annual expenses of the bridge will

be very light, and will only be a fraction of the receipts from the central promenade alone. The receipts from all sources will be so immense that the Bridge Company, in a few years after the completion of the work, will feel justified to put up great magnifi-cent depots and portals at both termini which shall be a credit to the two cities. A revenue of \$2,000,000 will pay 10 per cent. upon a capital of \$20,000,000, and 15 per cent. upon an investment of \$13,500,000. But the work will only cost from \$6,000,000 to \$7,000,000, and the investments in real

to \$7,000,000, and the investments in real estate will pay good returns of their own."

The charter of the company confined the Brooklyn terminus to a point near the junction of Main and Fulton streets, but on this side there was allowed a choice of any point between Chatham square and the junction of Nassau and Chatham streets.

Mr. Roebling in this first report considers also a third terminus, although admitting that it was barred by the charter. This was the junction of Bowery and Canal street. The total length by the park line was placed at 5862 feet; by the Chatham square line at 5862 feet; by the Chatham square line 5200 feet, and by the Bowery and Canal line 5984 feet. The park line was finally chosen, and some alteration of the Brook-lyn approach made. The length of the pre-

lyn approach made. The length of the present bridge is 5989 feet. The length of the river span is 1595 feet 6 inches. The length of the Brooklyn approach is 971 feet, and on this side of the river the approach is 1562 feet 6 inches long.

After considering these three proposed lines, Mr. Roebling says in his report: "The park line recommends itself as the true line of the bridge, on account of the location of its terminus opposite the Register's office in the park. This point will collect and accommodate more travel than Chatham square. Although the length of this line exceeds the Chatham square line, and its central span will also be 120 feet greater, yet its more favorable location will outweigh yet its more favorable location will outweigh these much weightier considerations. For these much weightier considerations. For the next fifty years to come the City Hall Park will remain the great focus of travel, from which speedy communications will ramify in all directions." As to the practicability of a supension bridge of the proposed span, Mr. Roebling pronounced any span less than 3000 feet entirely practicable, and with the best quality of steel wire a greater span than 3000 feet, he says, could be made secure for all sorts of traffic. In this report Mr. Roebling put the length of the river span from center to center of the towers at 1600 feet, and it is proof of the general accuracy of his calculations that its general accuracy of his calculations that its actual length varies from that but 4 feet 6 actual length varies from that but 4 feet 6 inches. His plan for the passage of trains over the bridge was by an endles wire rope, to be propelled by a stationary engine set up on the Brooklyn side underneath the floors, and he proposed a speed of 20 miles an hour, which, he said, might in the center of the bridge be increased to 30 or 40 miles an hour. He suggested trains of ten cars, with a senting capacity of one hundred for each a seating capacity of one hundred for each car, the cars to be built very light and entirely of iron and steel. In an emergency, such as a necessity for the transportation of troops, he estimated that 228,000 men could be passed over in one direction in the cars, and by adding those who could walk over, the total would reach nearly half a million of men, in addition to the artillery and baggage trains. At any rate, 40,000,000 of passengers per year could be transported over in the trains with ease and comfort. The estimated weight of the structure, with all the weight that could possibly come upon it, is put at 4753 tons. The strength of each cable as it is completed is 12,200 tons. Mr. Roebling assures the directors that in his opinion the bridge will not be affected by the heaviest gales, but that it will "successfully resist the action of the severest hurricanes." and that the motions of the ordinary passenger trains will not be felt.
In the construction of the bridge the tow-

ers form one supporting element, the framing of the floor the second and the extensive system of stays the third. The floor, in connection with the stays, will support itself without the assistance of the cables, so that if the cables were removed the bridge would simply settle in the center, but it would not fall, for the stays alone will support 15,000 tons, which is ample to hold up the floor. The first plan for the towers was 134 feet by 56 at the water line, and 120 feet by 40 at the top, and the elevation was to have been



Though we have occupied this identical scace in The Iron Age for more than twelve years, and though we have been the leading Bit Brace manufacturers of this country during all that time, we have seldom spoken of it in our advertisement, for the reason that all the leading dealers were supposed to know it. Since we first put

## THE BARBER IMPROVED BIT BRACE

on the market, at least a dozen patent braces have run their race through the stores and junk stores, and are now forgotten. It is true, some of them died violent deaths, but most of them perished from constitutional weakness. We do not offer to meet competition, as no one else can make our Brace, and we have nothing to compete with. Others might if they would make their braces of steel, but it is much more expensive, and no might if they would make their braces of steel, but it is much more expensive, and no one can tell the difference until the brace is put into use. All of our Nickel-Plated Braces are made of rolled steel, with forged steel jaws, which will never wear out. We formerly made malleable iron jaws, which in time wore out. All such we will now replace with steel for 25 cents per pair. They are all one size and will always fit. Our Ratchet Brace at the present time has no competitor in the market. Dealers who sell other styles of braces will find it to their interest to buy their stock of ratchets from us.

The price of Barber Braces has not been changed for many years, and we do not anticipate any variation in the near future. Thanking our customers for past favors, we now solicit their future orders.

#### MILLERS FALLS CO., 74 Chambers Street, New York.

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Anti-Window Rattlers, Brass and Nickel-Plated. WESTERN FILE CO.'S Cast-Steel Files. AMERICAN SHEAR CO.'S Shears and Scissors. H. M. MYERS & CO.'S Shovels, Spaces and STEELE & SONS' Wrought Handle Sad Irons.

E. & G. BROOKE'S "Anchor Brand" Nails, Brads, | EXCELS'OR MILLS, Genuine Turkish Emery. Sulkes. &c. | BROWN & BRO.'S Brass and Copper Wire, Rivets, Spoons, &c.
GAYLORD MANUFACTURING CO.'S Till, Chest

> AMES' Genuine Chester Emery. COLWELL & COLLINS, NORWAY BOLT CO., Norway Carriage and Tire Bolts. PLYMOUTH MILL CO.'S Black and Tinned Iron

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Horse, Mule & Snow Shoes of the Perkins Pattern. All kinds Wagon & Carriage Axles Works at Valley Falls, R. I., and Buffalo, N. Y. Office, 31 Exchange Place, Providence, R. I. C. B. PERKINS Gen'l Manager, W. CARPENTER, President R. W. COMSTOCK, Secretary

# NATIONAL Horse Nail Co.

## FINISHED

(BRIGHT OR BLUED)



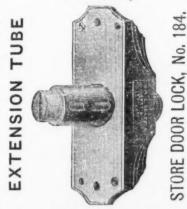
These pails are made of the best brands of NOR-WAY IRON, and are guaranteed to be equal to

NATIONAL HORSE NAIL CO., VERGENNES, VT.

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A. E. DEITZ,

(Successor to Barnes & Deltz,) Manufacturer of Store Door Locks, Night Latches, Padlocks, Drawer Locks, &c, with Flat Steel Keys.



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LAMBERTVILLE IRON WORKS.

Established in 1839



Patent Screw Wrenches

MARCH 23, 1869, REISSUED 1870.

NOVEMBER 10, 1863, FEBRUARY 23, 1864, REISSUED JUNE 1, 1869, IMPROVED AUG. 1, 1877.

The back thrust when in use borne by the SHANK instead of the Hand's None genuine unless stamped "L. COES & CO."

Worcester. MASS.

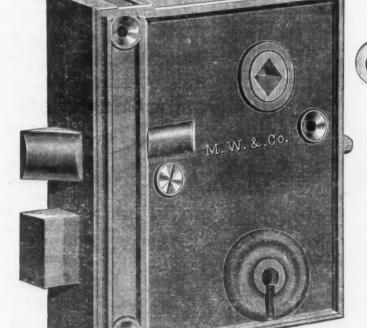
Warehouse, 97 Chambers St. & 81 Reade St., N. Y. DURRIE & McCARTY, Sole Agents.

#### WHAT IS IT?



rongly recommend the "Pennsylvania a month's trial; but we may state that LLOYD, SUPPLEE & WALTON, Phlladelphia. DURRIE & McCARTY, New York.

ESTABLISHED 1834.





NEW HAVEN, CONN., U. S. A.,

# DOOR LOCKS, KNOBS, PADLOCKS,

Gold Bronze Trimmings in NEW DESIGNS. No extra charge for our NEW IMPERIAL FINISH.

See samples of NEW LINE low priced Reversible Knob Locks, No. 2200, &c. with New Keys and variety of changes.

#### WAREHOUSES,

Where samples and a stock of our goods may be found and orders filled upon same terms as from the factory :

SARCENT & CO., No. 37 Chambers Street, New York. HEATON & DENCKLA, No. 507 Commerce St., Philadelphia, Pa.

OTIS D. DANA, Nos. 22 to 32 Pearl Street, Boston, Mass.

JOHN R. KELSO, Jr., No. 23 S. Charles St., Baltimore, Md.

#### DAVID HYMES & CO.,

·No. 2200. New.

92 Church Street, New York,

Hardware Manufacturers' Agents,

And Sole Manufacturers of the

"ACME EGG BEATER,"

The Best and Cheapest Egg Beater in the Market.



Bargains in Hardware and Cutlery. Low estimates made on all kinds of small castings in the rough, japanned or varni, had. WALKER'S

#### Forged Horse Shoes SHOENBERGER'S

# atent Toe Calks.

Superior to any in market.

Send for prices and samples. A. BUSSING, General Agent. 4 Warren St., New York.

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BROWNING, SISUM & CO., 85 Chambers St. Belt Hooks, Cotters, Spring Keys, D Rings, Staples, and everything pertaining to wire bending. Factory, BROOKLYN.



#### THE IDEAL COFFEE POT.

The engraving shows that the "Ideal" is the most perfect, simple and complete pot ever produced and as such is the best seiling pot in the market. It sells on its own merits. By its use the coffee is always regular, of the same quality, strength, and perfectly clear.

A child can make better coffee in this pot than can an adult by the old method of boiling. It is without doubt the best pot in the world to day, and you can sell them. They are used and recommended by Mrs. President Hayes, Mrs. Bishop Simpson, Hon. John Jay, Gen. I. Flint, California, and by everybody who has used one.

Prices: Polished Tin, per doz. 3 pt., \$7.80; 5 pt., \$10.20; 7 pt., \$4; 20; 9t., \$1.5. Nickel Silver; 3 pt., \$15; 5 pt., \$1, \$10.20; 7 pt., \$2; 7 pt., \$24; 9t., \$27. The nickel silver pots are nickel-plated outside and silver-plated inside. They are very handsome. Discount 25 per cent. Send for circular or 50 cents for a 5-pint sample pot.

IDEAL COFFEE POT CO., 622 Filbert St., Philadelphia, Pa.





Patent Horizontal Rim Cylinder Night Latch. elf-adjusting to doors of any thickness, with Patent Stop and Drawer Back Enob RIGHT OR LUFT HAND. PASSENGER CAR LOCKS, Bronzed, Nickel-Plated and Japanned.

BROOKLYN, N. Y.

d samples sent upon application.

the river span above high water is 135 et. At the towers the hight of the floor above high water is 119 feet 3 inches. The total hight of the towers above high water is 278 feet, 159 feet of which is above the roadway. The depth of the tower foundation below high water on the Brooklyn side is 48 feet and on this side 78 feet. The anchorages are 129 feet by 119 at the base, The

and 117 feet by 104 at the top. The hights are 89 feet front and 85 feet rear.

In this first report Mr. Roebling, looking to the future, says: "The time will arrive when substantial tunnels will be constructed, at an immense cost, under the bed of the river for the express purpose of transport-ing freight. Permanent tunnels of masonry

made on the 1st of September, 1867, nearly 14 years ago, and only about four months after the granting of the charter in which the following persons were named as incorporators: John T. Hoff nan, Simoon B. Chittenden, Edward Ruggles, Smith Ely, Jr., Samuel Booth, Granville T. Jenks, Alexander McCue, Henry E. Pierrepont, Martin Kalbfleisch, John Roach, Charles A. Towns-end, Henry G. Stebbins, Charles E. Bell, Chauncey L. Mitchell, T. Bailey Myers, Seymour L. Husted, Wm. A. Fowler, Wm. W. W. Wood, Audrew H. Green, Edward W. W. Wood, Audrew H. Green, Edward W. Corlies, Wm. C. Rushmore, Ethelbert S. Mills, Alfred W. Craven, Arthur W. Benson, T. B. Cornell, John N. Hayward, Isaac Van Anden, Pomeroy P. Dickenson, Alfred M. Wood, J. Carson Brevoort, William Marshall, Samuel McLean, John W. Combs, William Hunter. Jr., John H. Prentice, Edmund Driggs, John P. Atkinson and John Morton. The capital stock of the corporation was fixed at \$5,000,000, in shares poration was fixed at \$5,000,000, in shares of \$100 each, with power to increase it with the consent of the majority of the stock. The persons above named were constituted the first board of directors, to hold their offices until the first Monday in June, 1868, au l after that time it was provided that the number of directors should not be less than number of directors should not be less than 13, nor more than 21. It was also directed that the officers should be a president, secretary and treasurer, to be annually elected by the board of directors.

It was provided in the act of incorporation that the cities of New York and Brooklyn might subscribe to the capital stock such an ounts as two thirds of their common.

such amounts as two-thirds of their common such amounts as two-thirds of their common councils respectively should determine, and that these cities, or either of them, might at any time take the bridge by paying 33½ per cent. more than the cost, and guaranteeing that it should be a free passageway for vehicles and travelers. The subscription books having been opened, the \$5,000,000 of stock was allotted as follows:

| Purchaser.           | Shares. | Paid.<br>Per cent | Cash.       |
|----------------------|---------|-------------------|-------------|
| Henry C. Murphy      | 250     | 60                | \$15,000    |
| Isaac Van Anden      | 250     | 60                | 15,000      |
| William Marshall     | 50      | 60                | 3,000       |
| Seymour L. Husted    | 500     | 60                | 30,000      |
| Samuel McLean        | 50      | 40                | 2,000       |
| Arthur W. Benson     | 20      | 60                | 1,900       |
| Alexander McCue      | 250     | 60                | 15,000      |
| William M. Tweed     | 470     | 40                | 16,800      |
| Peter B. Sweeney     | 420     | 40                | 16,800      |
| Hugh Smith           | 420     | 40                | 16,800      |
| R. B. Connolly       | 420     | 40                | 16,800      |
| Henry W. Slocum      | 250     | 60                | 35,000      |
| Jas. S. T. Stranahan | 500     | 60                | 30,000      |
| Kingsley & Keeney    | 930     | 60                | 55,800      |
| John H. Prentice     | 50      | 60                | 3,000       |
| Demas Barnes         | 340     | 60                | 6,000       |
| John W. Lewis        | 50      | 60                | 3,000       |
| William Hunter, Jr   | 50      | 60                | 2,000       |
| Charles C. Martin    | 23      | 60                | 1,200       |
| City of New York     | 15,000  |                   | 698,000     |
| City of Brooklyn     | 30,000  | 60                | 1,800,000   |
| Totals               | 50,000  |                   | \$2,762,400 |

Mr. Roebling entered heartily into the work, but before any actual construction wes begun he met with an accident which cost him his life. He was engaged in makside, when one of the Fulton Ferry boats in ontering her slip surged against the guard logs at its side. Mr. Roebling was standing on the string-piece. His foot was caught and so badly crushed that it had afterward to be amputated, and he died from lock-jaw.
Fortunately for the success of the enterprise, his son, Mr. W. A. Roebling, had been associated with him in the work from the first, and was thoroughly conversant with all its details, so that he was able to succeed his father as Chief Engineer and carry on the construction as it had been orginally planned. construction as it had been orginally planned. The work of construction was begun on Monday, January 3, 1870, and consisted at first of the removal of the piles of the upper slip, which had been used by the Fulton Ferry and which had been acquired by the bridge company. The borings on each side of the river indicated that to reach the bedrock, on which alone a solid foundation for such immense weights as those of the proposed granits towers could be maintained, it would be necessary to go upon the Brook-lyn side to a depth of 45 feet below highwater level and on this side to a depth of 78 feet. To make the necessary excavations it was determined to employ compressed eir, and a contract was made with Messrs. Webb & Bell to build two wooden caissons larger than had ever been constructed be-The causen used on the Brooklyn side which was the first to be constructed, was 168 feet by 102 feet, and the other was 172 feet by 102 feet. Each was in effect a wooden box, bottom upward, the interior space in the New York caiseon being o feet in hight, with a roof of 22 feet thick of solid timber, botted together. The caiseons were built on ways, and launched as ships are launched. with a roof of 22 feet these of solid timber, and perfectly sound bolted together. The caissons were built on ways, and launched as ships are launched, and the Supreme Court to appoint come and then towed to the slips where the towers are to be creeked. Courses of granite were laid upon them, sinking them until they laid upon them, sinking them until they laid upon them, sinking them until they laid upon them. lail upon them, sinking them until they appointed, and upon their appraisement the was completed for this anchorage in August, land was taken, the price paid being about then forced into the chambers below until the water was displaced and the river-bed itself stock subscribed was called for and paid level. The dimensions of this anchorage as follows: was left dry. The workmen then entered as follows:

the shafts, at the bottom of which were air-locks, and excavated the earth, which was feet by 59 at the water line, and at the top 136 feet by 63, and the hight of the center of the river span above high water interlocks, and excavated the earth, which was carried to the surface and removed. The caissons thus settled, until in time, at the depths above named, the solid foundation was reached. Then the space where the workmen had operated was filled with concrete. It is expected that the timber thus buried so far below the surface will be preciselly indextuntible, and that there is puried so far below the surface will be practically indestructible, and that there is no danger of the towers settling. The pressure of air required in this work varied from 18 to 36 pounds. Of course there were many cases of "caisson disease" among the workmen, and this was the more frequent during the sinking of the Brooklyn caisson which was the first to be placed in caisson, which was the first to be placed in position; but experience was gained here, and during the sinking of the New York caisson the care of the workmen was placed under the supervision of Dr. Andrew H. ing freight. Permanent tunnels of masonry are practicable, and can be made at a heavy cost. It will be done when money is worth 2½ per cent. and the population shall have increased tenfold." Mr. Roebling also predicts an increase in the taxable property of Brooklyn, after the bridge shall have been completed, of from two to three milions annually, which, he says, will pay for the work in less than three years.

All these calculations and predictions were made on the 1st of September, 1867, nearly

At this stage in the progress of the work it had become apparent that the cost of the structure was going to be much in excess of the original estimates, and rumors were current that in the expenditures thus far supplies had been furnished by members of the company at prices prejudicial to the interests of the bridge. The Executive Committee therefore directed the Chief Engineer, Mr. Roebling, to examine and Engiteer, Mr. Esecuing, to examine and report whether the prices paid for stone, lumber and other materials and for labor had been revsonable and just, and in a report made on June 23, 1872. Mr. Roebling reported that "every dollar's worth purchased for the bridge had been expended in a legitimate manuer and for the purpose for which it was designed and nothing. for which it was designed, and nothing whatever has to my knowledge been diverted into any outside channel." He also says; "It is a notorious fact that the stone for the East River Bridge is supplied at prices lower than any that have ruled for 12 years previous. In my opinion it has been furnished at the lowest living rates compatible with an adherence to the specifications. The same holds true in regard to the purchases of lumber, coment, gravel, iron, &c." Nevertheless, in the report of the Executive Committee for May, 1872, the actual expenditure to that time was stated at \$2.759,154.72, or within a small amount of all that had then been paid in. The Chief Engineer was instructed to report whether the bridge could be completed for the sum originally estimated by the first Chief Engineer or not, and if not, to state the causes of the excess. The final estimate of Mr. John A. Roebling in 1867 was \$7,000,000. In reply to this instruc-tion, Mr. W. A. Roebling said that the bridge could not be completed for that amount; that the cost of the bridge as far as built comprised portions of the original estimate amounting to \$1.412,250; the actual cost, therefore, had exceeded the original estimate by \$1,346,894,72. The original estimates, he said, had omitted many large items entirely, and had taken others too low for want of sufficient information at the time. Then, too, since the original estimates were made, the bridge had been widened from 80 to 85 feet, two of the original sidewalks has been given up and two additional horse-car tracks substituted. two additional horse-car tracks substituted. These charges involved an increase of 7 per cent. in the cost of the entire bridge. Then the United States government had ordered an increase of 5 feet in the elevation of the bridge. No allowance whatever had been made for land and land damages. Agair, in the original estimate provision had been made for a pile foundation for the tower. made for a pile foundation for the towers, and the cost of excavating to the rock foundation had been largely in excess of the cost of a pile foundation. Then there had been a fire in the Brooklyn caisson which

with boiler plate at an expense of \$20,000. He therefore submitted a new estimate, making the total cost \$9,500,000. The fire in the Brooklyn caisson occurred ing some measurements on the Brooklyn early in 1872. Its exact cause was never of \$8,000,000, but restricted them to a side, when one of the Fulton Ferry boats in fully known, but it was supposed that the workmen, discovering a leak in the caisson by the peculiar hissing nois) which always gives warning of such leaks, had been going about with lighted candles to find its exact could be acquired in the manner provided location, and had placed the flame near enough to some of the seams to ignite the oakum with which the joints of the caisson covered the air pressure was removed, and the interior of the caisson was allowed to fill with water. Work was suspended for four days, and then the pressure was renewed and the water again expelled. When the workmen again entered the chamber they found a considerable part of the time. they found a considerable part of the tim ber on one side and part of the roof burned.

The work of building the towers was con-

cost \$15,000, and in order to prevent a recurrence of such an accident, the interior

of the New York caisson had been lined

The work of building the towers was continued steadily during 1872 until the latter from all sources up to that date amounted to \$5,487,987.27, and there had been extended to \$5,487,987.27, and there had been extended to \$5,388,646.06.

The Brooklyn tower had been raised 86 feet and the Brooklyn tower 162 fast. The land for the Brooklyn anchorage riad up to a hight of 240 feet and was riad up to a hight of 240 feet and was riad up to a hight of 240 feet and was riad up to a hight of 240 feet and was riad up to a hight of 240 feet and was riad up to a hight of 240 feet and was riad up to a hight of 240 feet and was riad up to a hight of 240 feet and was riad up to a hight of 240 feet and was riad up to a hight of 240 feet and was riad up to a hight of 240 feet and was riad up to a hight of 240 feet and was riad up to a hight of 240 feet and was riad up to a hight of 240 feet and was riad up to a high of 240 feet and was riad up to from York street to Front street along James street, had been acquired and excavated 25 feet for the foundation of that work. The Chief Engineer had become afwork. The Chief Engineer had become alfected with the "caisson disease" and had been granted a four months' leave of absence. He therefore made no report for this year. Mr. William C. Kingsley, how the first been the genever, who had from the first been the gen-

| Capital stock paid in as per statement of<br>May 1, 1872 |              |
|--|--------------|
| Henry C. Murphy  | 4,80         |
| Isaac Van Anden  | 2,50         |
| William Marshall   | 50           |
| Seymour L. Husted  | 5,00         |
| Arthur W. Benson   | 20           |
| Alexander McCue  | 2,50         |
| J. S. T. Stranahan                                       | 4,70         |
| John H. Prentice   | 50           |
| The City of New York                                     | 300,00       |
| The City of Brooklyn                                     | 600,00       |
| Demas Bardes   | 7,00         |
| W. H. Vanderbilt   | 20           |
| Abram S. Hewitt  | 30           |
| W. A. Appleton   | 10           |
| Lloyd Aspinwall  | 10           |
| Total  | R = 69 , 600 |

The expenditures, however, kept pace with the receipts and amounted on the 1st of May, 1873, to \$3,573,195.40, necessitating another call upon the stockholders, who responded as follows:

| 1873.   |          |
|---|----------|
| May c. Wm. Marshall                                 | 8500     |
| June 17, John H. Prentice                           | 1,000    |
| Jane 17, A. W. Benson                               | 400      |
| June 17, I-aac Van Anden                            | 3,500    |
| June 17, J. S. T. Stranahan                         | 4,800    |
| June 17, Lloyd Aspinwall                            | 100      |
| June 17, A. S. Hewitt                               | 300      |
| June 17, Alexander McCue                            | 3,500    |
| June 17, Demas Barnes                               | 2,000    |
| June 19, Wm. Hunter, Jr                             | 2,000    |
| June 19, Kingsley & Keeney                          | 17,400   |
| June 19, C. C. Martin                               | 400      |
| June 19, Robert Benydict                            | -200     |
| June 19, C. P. Dixon                                | 900      |
| June 19, W. A. Fowler                               | 200      |
| June 19, W. W. Goodrich                             | 300      |
| June 19, F. D. Moulton                              | 200      |
| June 19. J. B. Norris                               | 300      |
| June 19, Wm. Schwarzwaelder                         | 300      |
| June 19, B. F. Tracy                                | 200      |
| June 19, J. B. Woodward                             | 290      |
| une 19, H. H. Wheeler                               | 300      |
| une 19, J. P. Robinson                              | 200      |
| une 20, Wm. Marshall                                | 500      |
| fune 20, Wm. Marshall. fuly 8, S. L. Husted.        | 5,000    |
| uly 15, H. W. Slocum                                | 5,000    |
| tug, 1, Tab City of Brooklyh                        | 25,000   |
| ug. 4. The City of Brooklyn                         | 175,000  |
| oct. o. The City of New York, 7 per cent.           |          |
| bonds<br>Dec. 17, The City of Brooklyn, 7 per cent. | £ 50,000 |
| Dec. 17. The City of Brooklyn, 7 per cent.          |          |
|   | 50,000   |
| an. 2, The City of Brooklyn, 7 per cent.            |          |
| an. 2, The City of Brooklyn, 7 per cent.            |          |
| bonds   | 42,000   |

Jan. 2, The City of Brooklyn, cash..... Jan. 12, Hugh Smith

Total..... \$4,197,800 The company, on the 1st of May, 1874, found themselves in debt, the total amount expended being \$4,466,153 52. The Brooklyn tower had risen 222 feet above high water, the New York tower 123 feet, and the ter, the New York tower 123 feet, and the Brooklyn anchorage was 6 feet above the surface. By far the larger proportion of the money thus far contributed had been obtained from this city and Brooklyn, which, by the act of 1869, was entitled to representation in the Board of Directors—this city by its Mayor, Controller and President of the Board of Aldermen, and Brooklyn by its Commissioners of the Sinking Fund. The period fixed for the completion of the bridge Commissioners of the Sinking Fund. The period fixed for the completion of the bridge period fixed for the completion of the bridge was on the 1st of June, 1874, and as it was evident that it could not be completed on that date, additional legislation was needed. The stockholders other than the two cities were averse to contributing further, and work was arrested for a time. On June 5, 1874, an act was passed providing that the two cities might, by a vote of their Common Councils, buy out the other stockholders and become sole proprietors of the bridge by repaying the amount subscribed, with interest from the time of payment, and that then the Board of Directors of the New York Bridge Board of Directors of the New York Bridge Company should consist of 20 members, to be appointed as follows: The Mayor and Controller of New York and the Mayor and Controller of Brooklyn, each to appoint eight directors and to be themselves members of the board by virtue of their offices. The said board was given the power to levy such toll on the bridge travel, when completed, as should be deemed expedient, and the income was to be applied to the payment of the principal and interest of all the bonds issued, and the cities were authorized to issue bonds in addition to the amounts previously subscribed—this city, \$500,000 a year for 1874 and 1875, and Brooklyn double the amount

in the same year.

Further legislation on May 14, 1875, provided for the dissolution of the old company whenever two-thirds of the private stock had been thus purchased by the two cities, and that the trustees might call on the two cities who the same two processors. cities for whatever amounts were necessary for the prosecution of the work to the amount could be acquired in the manner provided Torrey's Door Springs.

for in the taking of land. The necessary action was obtained in the Common Councils of both cities, and the private stockholders were for the most part by the two cities. Money for the continued prosecution of the work had, however, been received from time to time from this city

ried up to a hight of 240 feet and was finished in 1876. Early in 1875 the property on which New York auchorage is erected was acquired by the Bridge Company and the work of excavating for the foundation began. Great difficulty was experienced in this work on account of the swampy nature of the ground, and expensive pumpover, who had from the first been the general superintendent of the company, reported the progress of the work to the Executive Committee. It had been found impossible to purchase the property for the site of the Brooklyn anchorage from its owners by argument, and an application had to be made to the Surreme Court to appoint completely of the purchase the troops of the property for the site of the Brooklyn anchorage from its owners by argument, and an application had to be made to the Surreme Court to appoint completely sound after their long burnal, thus confirming the made to the Surreme Court to appoint completely sound after their long burnal, thus confirming the are : Length over all at the base, 129 feet;

the rear, 116 feet 4 inches. The hight of the roadway at the front is 89.04 feet and at roadway at the front is 89.04 feet and at the rear 85.24 feet. The anchorage was finished September 25, 1876. At the beginning of 1875 the Brooklyn anchorage had risen to a hight of 62 feet. It was completed during that year as far as it could be preparatory to the cable making. Both towers and anchorages being complete, work was begun on the construction of the cables. The attent care was exercised in making. the utmost care was exercised in making the contracts for the wire, so as to get that which was the very best. The machinery for making the cables was placed upon the Brooklyn anchorage, the plan proposed being to take the individual wires across the river one by one, and then bind them all together into one mass to form the cable. The wire used is what is called No. 8, 14 feet of which weighs one pound, each cable being composed of 6300 wires laid parallel, making, when bound together, a cable 15 inches in diameter. The main difficulty was to get the first wire across. The wire was upon a reel placed in a framework, so that it could revolve freely, and this reel was placed upon a scow at the foot of the Brooklyn tower. The end of the wire was taken up over the Brooklyn tower, and down into the yard in the rear of the tower.

A manila rope had been drawn from the engine on the Brooklyn anchorage to the tower, and this was fastened to the end of the wire. The engine was then started, and the end of

the wire was carefully drawn to the Brooklyn anchorage over the roofs of the intervening buildings. When it had been secured there the scow containing the reel was taken in tow, the wire running off the reel to the bottom of the river as she was towed to the New York side. Then all the remaining wire upon the reel was unwound and coiled in large bights upon the dock at the foot of the New York tower. When the end of it was reached it was hoisted to the top of the tower, and passed over it to the stone-hoisting engine. It was then necessary to watch for a time when there was no vessel in the river in the way of the bight of the wire when it should be drawn from the water. Such a time was found, and on August 14, 1876, the first wire was successfully stretched across for the whole distance from the Brooklyn anchorage to the top of the New York tower. The end of the wire was then taken to the New York anchorage in the same manner that had been found successful upon the other side of the river. A second wire was other side of the river. A second wire was taken over the next day, and the two were spliced together around driving wheels, forming an endless rope capable of being worked to and fro. Another "traveler" was taken over by being seized to the first at convenient distances, and then what was called a "carrier" was taken over by the scow in the same manner as the first wire. So, gradually, the means of communication were enlarged, and on the 25th of August, 1876, Mr. E. F. Farrington, the master mechanic of the company, was able to cross the river in what is called a "buggy," on one of the travelers. Then the detail of the work went on, each day adding to the number of wires from tower to tower, until finally a light foot-bridge was run across, and all who desired and could obtain the necessary permission, could walk at will from one anchorage to the other over the tops of the towers and across the river. scow in the same manner as the first wire tops of the towers and across the river. Then the "cradles," ten in number, were got in position, so that the men engaged in the cable-making could regulate the wires, and the work of making the cables went on uninterruptedly until their completion in uninterruptedly until their completion in 1879. The property for the approaches was, for the most part, acquired by the mandate of the court, as provided for in the charter, and in the building of the approaches on either side of the river many old landmarks have been removed, the most notable being St. A and P. F. Church on the court of the

width at the front, 106 feet 4 inches, and at Brooklyn. The work has been delayed somewhat by refusals, on the part of those having charge of the finances of the cities, to supply the money needed, and in April, 1880, additional legislation was obtained from the Legislature providing for an additional appropriation for the completion of the work. The work on the approaches has been continued until, on both sides of the river, they are nearly completed. Next spring the work of building the roadway will begin, and it is expected that the work will be completed and the bridge opened for traffic by the end of the work. of the year.

> The wages now paid by the Monocacy Com-pany at their iron ore mines is from \$1 to \$1.25 a day.

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## **General Hardware** 53 BEEKMAN ST.,

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HARDWARE, METAL, IRON RUBBER, SHOE, PAPER AND PAPER-HANGINGS, LUMHER, COAL AND PAILHOAD PAPER WANTED ADVANCES MADE ON BUSINESSS PAPER AND OTHER SECURITIES.

# SWEDISH IRON.

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| Philade Smelling on An Autono, 7111. 35  Reeves and A. Tolladelphia. 35  Reeves and A. Tolladelphia. 35  Reves and A. Tolladelphia. 36  Bridge Bellders. 36  Mosolev Iron Bridge and Roof Co. 5 Dey. N. Y. 6  Bridge For Chain Perms. 37  Crosby A. D., Cuba, N. T. 31  Butte and Hinges. 37  American Soiral Spring Butt Co. 32 Beekman, N. Y-40  New England Butt Co. 52 Platt, N. Y. 32  Stanley Works. New Britain, Conn. 38-10  Stanley Works. New Britain, Conn. 38-10  Union Mrg. Co. 60 Chambers, N. Y. 7  Oarringe Holts. Makers of. 38-10  Stanley Works. New Britain, Conn. 38-10  Union Mrg. Co. 60 Chambers, N. Y. 7  Oarringe Horts. Makers of. 38-10  Smith H. D. & Co. Plataville, Conn. 12  The E. D. Clapp Mrg. Co. Auburn, Ng. 80  Oasters. Forth. 38-10  Castings. Fron. Manilus, N. Y. 30  Clavings. Fron. Manilus, N. Y. 30  Clevel Hard ware Co. Bridgeport, Conn. 40  Hopon & Brainard, Wothersield, Conn. 7  Flewell Hard ware Co. Bridgeport, Conn. 40  Hopon & Brainard, Wothersield, Conn. 7  Flewell Hard ware Co. Bridgeport, Conn. 40  Hopon & Brainard, Wothersield, Conn. 7  Flewell Hard ware Co. Bridgeport, Conn. 40  Hopon & Brainard, Wothersield, Conn. 7  Flewell Hard ware Co. Bridgeport, Conn. 40  Hopon & Brainard, Wothersield, Conn. 7  Flewell Hard ware Co. Bridgeport, Conn. 40  Hopon & Brainard, Wothersield, Conn. 7  Flewell Hard ware Co. Bridgeport, Conn. 40  Hopon & Brainard, Wothersield, Conn. 7  Phreix Cast steel Co. Co. Philadelphia. 40  Flagg Stauley & & Co. Philadelphia. 40  Flagg Stauley & & Co. Philadelphia. 40  Flagg Stauley & & Co. Philadelphia. 40  Flagge Bridge  | Mannattan Brass Co., 1st ave. 6. 2/en s., 31 Merchant & Co., 507 Market st., Phila   | - |
| Philade Smelling on An Autono, 7111. 35  Reeves and A. Tolladelphia. 35  Reeves and A. Tolladelphia. 35  Reves and A. Tolladelphia. 36  Bridge Bellders. 36  Mosolev Iron Bridge and Roof Co. 5 Dey. N. Y. 6  Bridge For Chain Perms. 37  Crosby A. D., Cuba, N. T. 31  Butte and Hinges. 37  American Soiral Spring Butt Co. 32 Beekman, N. Y-40  New England Butt Co. 52 Platt, N. Y. 32  Stanley Works. New Britain, Conn. 38-10  Stanley Works. New Britain, Conn. 38-10  Union Mrg. Co. 60 Chambers, N. Y. 7  Oarringe Holts. Makers of. 38-10  Stanley Works. New Britain, Conn. 38-10  Union Mrg. Co. 60 Chambers, N. Y. 7  Oarringe Horts. Makers of. 38-10  Smith H. D. & Co. Plataville, Conn. 12  The E. D. Clapp Mrg. Co. Auburn, Ng. 80  Oasters. Forth. 38-10  Castings. Fron. Manilus, N. Y. 30  Clavings. Fron. Manilus, N. Y. 30  Clevel Hard ware Co. Bridgeport, Conn. 40  Hopon & Brainard, Wothersield, Conn. 7  Flewell Hard ware Co. Bridgeport, Conn. 40  Hopon & Brainard, Wothersield, Conn. 7  Flewell Hard ware Co. Bridgeport, Conn. 40  Hopon & Brainard, Wothersield, Conn. 7  Flewell Hard ware Co. Bridgeport, Conn. 40  Hopon & Brainard, Wothersield, Conn. 7  Flewell Hard ware Co. Bridgeport, Conn. 40  Hopon & Brainard, Wothersield, Conn. 7  Flewell Hard ware Co. Bridgeport, Conn. 40  Hopon & Brainard, Wothersield, Conn. 7  Flewell Hard ware Co. Bridgeport, Conn. 40  Hopon & Brainard, Wothersield, Conn. 7  Phreix Cast steel Co. Co. Philadelphia. 40  Flagg Stauley & & Co. Philadelphia. 40  Flagg Stauley & & Co. Philadelphia. 40  Flagg Stauley & & Co. Philadelphia. 40  Flagge Bridge  | Rome Iron Works, Rome, N. Y  |   |
| Bracket for Comin a trib.  Grosby A. B. Chee e. K. Rives, Manufacturers of.  Wilson Johr. Shofffeld. England.  Butts and Hinses.  American Soiral Spring Butt Co., 25 Beekman, N. 40  New England Buit Co., 50 Platt. N. Y. 51  Sabin M. Gros. 60 Ambors. N. Y. 51  Sabin M. Gros. 60 Ambors. N. Y. 52  Sabin M. Gros. 60 Ambors. N. Y. 52  Sabin M. Gros. 60 Ambors. N. Y. 52  Sabin M. Gros. 80 Britain. Conn. 85  Sabin M. Gros. 60 Ambors. N. Y. 70  Shelton & Co., Birmingham. Ct.  Townsond. Wilson & Hubbard. Failadeibhia. 27  Gowles C. & Co. New Haven. Cofn. 8  Smith H. D. & Co., Plantsville. Conn. 112  The E. D. Clapp Mgr. Co. Auburn. New 18  Garringe Springs.  Bexter Spring Co., Hulton Pa  Oar Axies.  Roberts A. & P. & Co., 26; S. 4th. Philadelphia. 5  Orberoix Caster Co., Indianapolis, Ind. 10  Castings. Fight.  Chency S. & Son, Manlius. N. Y. 52  Elwell Hard ware Co., Gridgeport. Conn. 49  Hopen & B. Philadelphia. Paker. Conn. 49  Hopen & B. Philadelphia. 19  Chester Steet Castings Co., 40 Library, Phila., Pa 49  Flugg Stauler O & Co., Philadelphia. 49  Plugg Stauler O & Co., Philadelphia. 49  Plugg Stauler O & Co., Philadelphia. 49  Plugg Stauler O & Co., Philadelphia. 49  Plugd Will Steet Castings Co., 40 Library, Phila., Pa 40  Flugg Stauler O & Co., Philadelphia. 49  Plugd Will Steet Castings Co., 40 Library, Phila., Pa 40  Flugg Stauler O & Co., Philadelphia. 49  Plugd Will Steet Castings Co., 40 Library, Phila., Pa 40  Carver John, 44 North 34 St., Brooklyn. E. D., N. Y. Chains. Sansh.  Morton Thomps Carvers of.  Rodel Manufacturers of.  Rodel Manu | Brass Founders. Philada Smeiting Co 12th and Noble, Phila33  |   |
| Bracket for Comin a trib.  Grosby A. B. Chee e. K. Rives, Manufacturers of.  Wilson Johr. Shofffeld. England.  Butts and Hinses.  American Soiral Spring Butt Co., 25 Beekman, N. 40  New England Buit Co., 50 Platt. N. Y. 51  Sabin M. Gros. 60 Ambors. N. Y. 51  Sabin M. Gros. 60 Ambors. N. Y. 52  Sabin M. Gros. 60 Ambors. N. Y. 52  Sabin M. Gros. 60 Ambors. N. Y. 52  Sabin M. Gros. 80 Britain. Conn. 85  Sabin M. Gros. 60 Ambors. N. Y. 70  Shelton & Co., Birmingham. Ct.  Townsond. Wilson & Hubbard. Failadeibhia. 27  Gowles C. & Co. New Haven. Cofn. 8  Smith H. D. & Co., Plantsville. Conn. 112  The E. D. Clapp Mgr. Co. Auburn. New 18  Garringe Springs.  Bexter Spring Co., Hulton Pa  Oar Axies.  Roberts A. & P. & Co., 26; S. 4th. Philadelphia. 5  Orberoix Caster Co., Indianapolis, Ind. 10  Castings. Fight.  Chency S. & Son, Manlius. N. Y. 52  Elwell Hard ware Co., Gridgeport. Conn. 49  Hopen & B. Philadelphia. Paker. Conn. 49  Hopen & B. Philadelphia. 19  Chester Steet Castings Co., 40 Library, Phila., Pa 49  Flugg Stauler O & Co., Philadelphia. 49  Plugg Stauler O & Co., Philadelphia. 49  Plugg Stauler O & Co., Philadelphia. 49  Plugg Stauler O & Co., Philadelphia. 49  Plugd Will Steet Castings Co., 40 Library, Phila., Pa 40  Flugg Stauler O & Co., Philadelphia. 49  Plugd Will Steet Castings Co., 40 Library, Phila., Pa 40  Flugg Stauler O & Co., Philadelphia. 49  Plugd Will Steet Castings Co., 40 Library, Phila., Pa 40  Carver John, 44 North 34 St., Brooklyn. E. D., N. Y. Chains. Sansh.  Morton Thomps Carvers of.  Rodel Manufacturers of.  Rodel Manu | Brass Wire Cloth. Howard & Morse, 45 Fulton, N. Y  | - |
| Roberts A. & P. & Co., 205 S. 4th, Philadelphia. 5 Obseters. Phereix Caster Co. Indianapolis, Ind  | Moselev Iron Bridge and Roof Co., 5 Day, N. Y 6<br>Bucket for Chain Pump.  | 1 |
| Roberts A. & P. & Co., 205 S. 4th, Philadelphia. 5 Obseters. Phereix Caster Co., Indianapolis, Ind   | Crosby A. D., Cuba, N. Y. Butcher and Shee Knives, Manufacturers of. Wison John, Sheffield, England  |   |
| Roberts A. & P. & Co., 205 S. 4th, Philadelphia. 5 Obseters. Phereix Caster Co., Indianapolis, Ind   | Butts and Hinges. American Spiral Spring Butt Co., & Beekman, N. Y. 40 New England Butt Co., 30 Platt, N. Y  |   |
| Roberts A. & P. & Co., 205 S. 4th, Philadelphia. 5 Obseters. Phereix Caster Co., Indianapolis, Ind   | Stanley Works, New Britain, Conn   | 1 |
| Roberts A. & P. & Co., 205 S. 4th, Philadelphia. 5 Obseters. Phereix Caster Co., Indianapolis, Ind   | Sheiton & Co., Birmiugham, Ct.<br>Townsend, Wilson & Hubbard, Philadelphia 27  |   |
| Roberts A. & P. & Co., 205 S. 4th, Philadelphia. 5 Obseters. Phereix Caster Co., Indianapolis, Ind   | Cowles C. & Co., New Haven, Conn. 8<br>Smith H. D. & Co., Plantsville, Conn. 13  | - |
| Roberts A. & P. & Co., 205 S. 4th, Philadelphia. 5 Obseters. Phereix Caster Co., Indianapolis, Ind   | Oarringe Springs. Dexter Spring Co., Hulton Pa   | 1 |
| Cheney S. & Son, Manlius, N. Y. Elwell Hardware Co., Bridgeport, Conn. 49 Hopson & Brainard, Wethersfield, Conn. 7 North Bros., Philadelphia. 1-3. 56 Castings. Sieet. Manufacturers of. Chenter Steet Castings Co., 49, Library, Phila. Pa 49 Euroka Cast Steel Co., Childselphia. 49 Hopson and Steel Co., Childselphia. 49 Hopson and Steel Co., Childselphia. 49 Hopson and Steel Casting Co., Philadelphia. 49 Gautking Irons. Carver John, 44 North 3d St., Brooklyn, E. D., N. Y. Chains. Manufacturers of. Round David, Clevelan I., Ohlo. 29 Chains. Sash. Morton Thomas. 6: Elizabeth, N. Y. Chaises. Manufacturers of. Buck Broz. Milbury, Mass. 7 Clutches. Friedion. Oesterline W. Cincinnati, O. Cleck Springs. &C. Cary & Moen, 24 W. 29th, N. Y. 3 Jounhay Bros. Bristol. Conn. 3 Ollock Springs. &C. Cary & Moen, 24 W. 29th, N. Y. 17 Pardee A. & Co., 118 Broadway, N. Y. 17 Conl Hods. Offiline Go., Phia. Pa. Ogfice and Spice Mills. Lane Brothers, Millbrook, N. Y. Enterprise M. G. O., Philadelphia, Pa. 3 Coke. Wister Francis, 230 S. Third, Phila. Compasses and Dividere, Manufacturers of. Bennis & Call How. & Tool Co., Springfield, Mass. 34&3 Stevens J. & Co., Chicopee Falls, Mass. Ghambers, Baring & Quinlan. Decatur, Ill. 26 Correst of Co. 16 Baltimore. Md. 3 The New Haven Copper Co., 255 Pearl, N. Y. 3 Corrested from. Mosolev Iron Bridge and Roof Co., 5 Dey. N. Y. 6 Corners for Oli Cloths. Hubbell R., Northville, N. Y. Consters, M. S. Washington, Boston. Osciev Iron Bridge and Roof Co., 5 Dey. N. Y. 6 Corners for Oli Cloths. Hubbell R., Northville, N. Y. Consters, M. S. Washington, Boston. Osciev Co. Bridge and Roof Co., 5 Dey. N. Y. 6 Corners for Oli Cloths. Hubbell R., Northville, N. Y. Consters, M. S. Washington, Boston. Osciev Iron Bridge and Roof Co., 5 Dey. N. Y. 6 Corners for Oli Cloths. Hubbell R., Northville, N. Y. Consters, M. S. Washington, Boston. Osciev Francis, Co., 60 Consters, N. Y. Consters, M. S. Washington, Boston. Oscieve, Massagarturers of. Burkinshaw Aaron, Fepper Ill. Mass. Hubbell R., Northville, N. Y. Onther  | Casters.   | I |
| Carver John, 44 North 34 St., Brooklyn, E. D., N. Y. Chains, Manusfacturers of Rradlee & Co., 3th Richmond St., Phila., Pa., 9 Round David, Clevelan J, Ohlo   | Castings, Iron. Chency S. & Son, Manlius, N. Y   |   |
| Carver John, 44 North 34 St., Brooklyn, E. D., N. Y. Chains, Manusfacturers of Rradlee & Co., 3th Richmond St., Phila., Pa., 9 Round David, Clevelan J, Ohlo   | Hopson & Brainard, Wethersheld, Conn   | ı |
| Carver John, 44 North 34 St., Brooklyn, E. D., N. Y. Chains, Manusfacturers of Rradlee & Co., 3th Richmond St., Phila., Pa., 9 Round David, Clevelan J, Ohlo   | Chester Steel Castings Co., 407 Library, Phila., Pa 40<br>Eureka Cast Steel Co., Chester, Pa   |   |
| Chains, Sash. Morton Thomas, 6: Elizabeth, N. Y. Chiaels. Manufacturers of. Buck Bros. Milbury. Mass   | Pittsburgh Steel Casting Co., Pittsburgh, Pa40 Cautiting 1rons. Carver John. 44 North 3d St., Brooklyn, E. D., N. Y.   |   |
| Chains, Sash. Morton Thomas, 6: Elizabeth, N. Y. Chiaels. Manufacturers of. Buck Bros. Milbury. Mass   | Chains. Manufacturers of<br>Bradlee & Co., 816 Richmond St., Phila., Pa  |   |
| Buck Broz. Milbury. Mass   | Chains, Sash.  | 1 |
| Ely E. R. & S. W. New York. Pardice A. & Co., 111 Broad way, N. Y.  Cont Hode. Continue Co., Phi's. Pa. Office and Spice Hills. Lane Brothers, Millbrook, N. Y. Enterprise M. R. Co., Philadelphia, Pa. Conterprise M. R. Co., Philadelphia, Pa. Conterprise M. R. Co., Philadelphia, Pa. Compasses and Dividere, Manufacturers of. Hemis & Call Hdw. & Tool Co., Springfield, Mass., 344-9 Stevens J. & Co., Chicopee Falls, Mass. Call Hdw. & Tool Co., Springfield, Mass., 344-9 Stevens J. & Co., Chicopee Falls, Mass. Call Hdw. & Tool Co., Springfield, Mass., 344-9 Stevens J. & Co., Chicopee Falls, Mass. Call Hdw. & Tool Co., Springfield, Mass., 344-9 Stevens J. & Co., Chicopee Falls, Mass. Call Hdw. & Tool Co., Springfield, Mass., 344-9 Stevens J. & Co., Co., Springfield, Mass., 344-9 Stevens J. & Co., Springfield, Mass., 345-9 Stevens J. & Springfield, Mas | Buck Bros. Milbury Mass  |   |
| Ely E. R. & S. W. New York. Pardice A. & Co., 111 Broad way, N. Y.  Cont Hode. Continue Co., Phi'a. Pa.  Office and Spice Hills. Lane Brothers, Millbrook, N. Y. Enterprise M. R. Co. Philadelphia, Pa.  Oske. Wister Francis, 230 S. Third, Phila. Compasses and Dividere, Manufacturers of. Hemis & Call Hdw. & Tool Co., Springfield, Mass., 344-9 Stevens J. & Co., Chicopee Falls, Mass. The Stevens J. & Co., Chicopee Falls, Mass. The Stevens J. & Co., Chicopee Falls, Mass. The New Haven Copper Co., 255 Pearl, N. Y.  The New Haven Copper Co., 255 Pearl, N. Y.  The New Haven Copper Co., 255 Pearl, N. Y.  The New Haven Copper Co., 255 Pearl, N. Y.  Corners for Oil Cloths. Hubbell R. Northville, N. Y.  Corners for Oil Cloths. Hubbell R., Northville, N. Y.  Counter-sink, 21 Washington, Boston.  Crayons. D. M., Cincinnati, O.  Crayons. Seldel R. B., Philadelphia, Pa.  Santh & S. Yre M. Co., 21 Cortlandt, N. Y.  Curry Combs. Lawrence Curry Comb Co., 302 East 22d, N. Y.  Catter of the Control of Co., 10 Duane, N. Y.  Catter of M. Control of Control | Clock Springs, &c.c. Cary & Moen, 234 W. 29th, N. Y  |   |
| Coni Hods. Griffiths Geo., Phi'a. Pa.  Office and Spice Millis. Lane Brothers, Millirook, N. Y   | Conl. Miners of.<br>Ely E. B. & S. W. New York   |   |
| Wister Francis, 200 S. Third, Phills.  Camphases and Dividers, Manufacturers of.  demis & Call Hdw. & Tool Co., Springfield, Mass., 34849  Stevens J. & Co., Chicoppe Falls, Mass.  The New Haven Copper Co., 252 Pearl, N. Y. 2  Gers Huskers.  Chambers, Bering & Quinlan. Decatur, Ill. 76  Ceru Sheller.  Chambers, Bering & Quinlan. Decatur, Ill. 76  Ceru Sheller.  Goddard Curtis, Alliance, O. 20  Cerrugated Iron.  Moselev Iron. Bridge and Roof Co., 5 Dey. N. Y. 6  Cerners for Gil Cloths.  Hubbell B., Northville, N. Y. 36  Corners for Gil Cloths.  Hubbell B., Northville, N. Y. 36  Corners for Gil Cloths.  Burber D. & College Co., 25 Chambers, N. Y. 25  Considerating, Staum & Co., 25 Chambers, N. Y. 36  Considerating, Staum & Co., 25 Chambers, N. Y. 36  Considerating, Staum & Co., 25 Chambers, N. Y. 36  Capolas.  Seldel R. B., Philadelphia, Pa. 35  Capolas.  Smith & S. yre Mfg. Co. 21 Cortlandt, N. Y. 36  Carry Combs  Lawrence Curry Comb Co., 30 East 22d, N. Y. 11  Cattery, Importers of.  Boker Hermann & Co., 10 Duane, N. Y. 36  Clattery, Importers of.  Boker Hermann & Co., 10 Duane, N. Y. 36  Clattery J. Masufacturers of.  Burkinshaw Aaron, Pepperell, Mass.  Toonway T. C., 20 Chambers, N. Y. 10  Cattery, Masufacturers of.  Burkinshaw Aaron, Pepperell, Mass.  Toonway T. C., 20 Chambers, N. Y. 10  Cattery, Masufacturers of.  Burkinshaw Aaron, Pepperell, Mass.  Toonway T. C., 20 Chambers, N. Y. 10  The Vm. Rogors Mfg. Co., 41 Chambers, N. Y. 10  The Wm. Rogors Mfg. Co., 50 Chambers, N. Y. 10  Differential Fulley Blocks.  Yale Lock Mfg. Co., 12 Chambers, N. Y. 10  Discenni Tables.  Jennings S. H., Deep River, Conn.  Leigh E. B. St. Louis, Mo. 10  Donar Holis.  Revelley Blocks.  Jennings S. H., Deep River, Conn.  Leigh E. B. St. Louis, Mo. 10  Donar Holis.  Revelley Blocks.  Prilia Smelting Co., 12th and Noble Sta, Phills.  Jinner Pail and Lanterps.  Jennings S. H., Deep River, Conn.  Leigh E. B. St. Louis, Mo. 10  Donar Holis.  Revelley Blocks.  Jennings S. H., Deep River, Conn.  Leigh E. B. St. Louis, Mo. 10  Donar Hol |  |   |
| Wister Francis, 200 S. Third, Phills.  Camphases and Dividers, Manufacturers of.  demis & Call Hdw. & Tool Co., Springfield, Mass., 34849  Stevens J. & Co., Chicoppe Falls, Mass.  The New Haven Copper Co., 252 Pearl, N. Y. 2  Gers Huskers.  Chambers, Bering & Quinlan. Decatur, Ill. 76  Ceru Sheller.  Chambers, Bering & Quinlan. Decatur, Ill. 76  Ceru Sheller.  Goddard Curtis, Alliance, O. 20  Cerrugated Iron.  Moselev Iron. Bridge and Roof Co., 5 Dey. N. Y. 6  Cerners for Gil Cloths.  Hubbell B., Northville, N. Y. 36  Corners for Gil Cloths.  Hubbell B., Northville, N. Y. 36  Corners for Gil Cloths.  Burber D. & College Co., 25 Chambers, N. Y. 25  Considerating, Staum & Co., 25 Chambers, N. Y. 36  Considerating, Staum & Co., 25 Chambers, N. Y. 36  Considerating, Staum & Co., 25 Chambers, N. Y. 36  Capolas.  Seldel R. B., Philadelphia, Pa. 35  Capolas.  Smith & S. yre Mfg. Co. 21 Cortlandt, N. Y. 36  Carry Combs  Lawrence Curry Comb Co., 30 East 22d, N. Y. 11  Cattery, Importers of.  Boker Hermann & Co., 10 Duane, N. Y. 36  Clattery, Importers of.  Boker Hermann & Co., 10 Duane, N. Y. 36  Clattery J. Masufacturers of.  Burkinshaw Aaron, Pepperell, Mass.  Toonway T. C., 20 Chambers, N. Y. 10  Cattery, Masufacturers of.  Burkinshaw Aaron, Pepperell, Mass.  Toonway T. C., 20 Chambers, N. Y. 10  Cattery, Masufacturers of.  Burkinshaw Aaron, Pepperell, Mass.  Toonway T. C., 20 Chambers, N. Y. 10  The Vm. Rogors Mfg. Co., 41 Chambers, N. Y. 10  The Wm. Rogors Mfg. Co., 50 Chambers, N. Y. 10  Differential Fulley Blocks.  Yale Lock Mfg. Co., 12 Chambers, N. Y. 10  Discenni Tables.  Jennings S. H., Deep River, Conn.  Leigh E. B. St. Louis, Mo. 10  Donar Holis.  Revelley Blocks.  Jennings S. H., Deep River, Conn.  Leigh E. B. St. Louis, Mo. 10  Donar Holis.  Revelley Blocks.  Prilia Smelting Co., 12th and Noble Sta, Phills.  Jinner Pail and Lanterps.  Jennings S. H., Deep River, Conn.  Leigh E. B. St. Louis, Mo. 10  Donar Holis.  Revelley Blocks.  Jennings S. H., Deep River, Conn.  Leigh E. B. St. Louis, Mo. 10  Donar Hol | Lane Brothers, Millbrook, N. Y   | 1 |
| Copper.  Merchant & Co., 207 Market at., Phila   | United Phonois on S Third Phila  | 1 |
| Corn Huskers. Chambers. Bering & Quinlan. Docatur, Ill   | Stevens J. & Co., Chicopee Falls, Mass   |   |
| Corn Huskers. Chambers. Bering & Quinlan. Docatur, Ill   | Pope. Cole & Co., Baltimore. Md  | 1 |
| Gorragated 1791.  Moselev from Bridge and Roof Co., 5 Dey. N. Y. 6 Corners for till Cloths.  Bubbell R. Northville. N. Y   | Corn Huskers.<br>Chambers. Boring & Quinlan. Decatur, Ill  | 1 |
| Barber D. F., 1271 Washington, Boston. Crayons. Rolling Mill. Steward D. M., Cincinnati, O. Crucibles. Seidel R. B., Philadelphia, Pa. Smith & S. yre Mfg. Co. 31 Cortlandt, N. Y. Carpy Combs Lawrence Curry Comb Co., 300 East 22d, N. Y. 11 Ontiery, Importers of. Boker Hermann & Co., 10 Duane, N. Y. 2435. Clatworthy F. & W. 82 Chambers. N. Y. 10 Catlery, Masufarturers of. Burkinshaw Aaron, Pepperell, Mass. 10 Conway T. C., 20 Chambers. N. Y. 11 Furness, Bannister & Co., Newark, N. J. 11 Furness, Bannister & Co., Newark, N. J. 12 John Russell Cutlers' Co. Greenfield, Mass. 13 John Russell Cutlers' Co. Greenfield, Mass. 14 John Russell Cutlers' Co. Greenfield, Mass. 15 John Russell Cutlers' Co. Greenfield, Mass. 16 John Russell Cutlers' Co. Greenfield, Mass. 17 John Russell Cutlers' Co. Hartfort, Ct. 11 The Lamson & Goodnow Mfg. Co., 85 Chambers, N. Y. 12 John Russell Cutlers' Co. Hartfort, Ct. 13 The Lamson & Goodnow Mfg. Co., 85 Chambers, N. Y. 14 Johnson & Goodnow Mfg. Co., 85 Chambers, N. Y. 15 Jifferential Futlery Blocks. 16 Yale Lock Mfg. Co., 12th and Noble Sta, Phills. 17 Jifferential Futlery Blocks. 18 Jinner Pail and Lanterps. 18 Jinner Pail and Lanterps. 18 Jinner Pail and Lanterps. 19 Jacenn Tables. 19 Jacenn Jacen | Corrugated Iron.  Moseley Iron Bridge and Roof Co., 5 Dey. N. Y 6  |   |
| Barber D. F., 1271 Washington, Boston. Crayons. Rolling Mill. Steward D. M., Cincinnati, O. Crucibles. Seidel R. B., Philadelphia, Pa. Smith & S. yre Mfg. Co. 31 Cortlandt, N. Y. Carpy Combs Lawrence Curry Comb Co., 300 East 22d, N. Y. 11 Ontiery, Importers of. Boker Hermann & Co., 10 Duane, N. Y. 2435. Clatworthy F. & W. 82 Chambers. N. Y. 10 Catlery, Masufarturers of. Burkinshaw Aaron, Pepperell, Mass. 10 Conway T. C., 20 Chambers. N. Y. 11 Furness, Bannister & Co., Newark, N. J. 11 Furness, Bannister & Co., Newark, N. J. 12 John Russell Cutlers' Co. Greenfield, Mass. 13 John Russell Cutlers' Co. Greenfield, Mass. 14 John Russell Cutlers' Co. Greenfield, Mass. 15 John Russell Cutlers' Co. Greenfield, Mass. 16 John Russell Cutlers' Co. Greenfield, Mass. 17 John Russell Cutlers' Co. Hartfort, Ct. 11 The Lamson & Goodnow Mfg. Co., 85 Chambers, N. Y. 12 John Russell Cutlers' Co. Hartfort, Ct. 13 The Lamson & Goodnow Mfg. Co., 85 Chambers, N. Y. 14 Johnson & Goodnow Mfg. Co., 85 Chambers, N. Y. 15 Jifferential Futlery Blocks. 16 Yale Lock Mfg. Co., 12th and Noble Sta, Phills. 17 Jifferential Futlery Blocks. 18 Jinner Pail and Lanterps. 18 Jinner Pail and Lanterps. 18 Jinner Pail and Lanterps. 19 Jacenn Tables. 19 Jacenn Jacen | Corners for Oil Cloths.<br>Hubbell R., Northville, N. Y  |   |
| Seidel R. B., Philadelphia, Pa. 35  Seidel R. B., Philadelphia, Pa. 35  Capolas. Syre Mfg. Co. 31 Cortlandt, N. Y. 39  Cawrence Curry Comb Co., 30 East 22d, N. Y. 11  Catlery. Importers of. 50  Caker Hermann & Co., 10 Duane, N. Y. 32  Clatworthy F. & W. & 2 Chambers, N. Y. 10  Friedmann & Leuteriung, of Chambers, N. Y. 10  Gatlery, Massifarturer of.  Hurkinshaw Aaron, Pepperell, Maß. 10  Conway T. C., 20 Chambers, N. Y. 11  Furneas, Bannister & Co. Newark, N. J. 10  Oreenfield fool Co., Greenfield, Mass. 10  John Russell Cutlery Co., 20 Chambers, N. Y. 40  Meriden Cutlery Co., 40 Chambers, N. Y. 40  Meriden Cutlery Co., 50 Chamber | Counterwink. Barber D. F., 121 Washington, Boston  |   |
| Smith & S. vyre Mfg. Co. 31 Cortlandt, N. Y. 32 Caubba Lawrence Curry Comb Co. 302 East 22d, N. Y. 11 Cutler Y. Importers of. Cutler Y. Rosydraturers of. Cutler Y. Massifacturers of. Cutler Y. Massifacturers of. Cutler Y. Massifacturers of. Cutler Y. C. 30 Chambers, N. Y. 11 Conway T. C. 30 Chambers, N. Y. 11 Furneas, Bannister & Co. Newark, N. J. 10 Oreenfield fool Co. Greenfield, Mass. 10 John Russell Cutlery Co. 30 Chambers, N. Y. 40 Meriden Cutlery Co. 40 Chambers, N. Y. 40 Meriden Co. 40 Chambers, N. Y. 40 Meriden Cutler Co. 40 Chambers, N. Y. 40 Meriden Co. 40 Chambers, N. Y. 40 Meriden Cutler | Steward D. M., Cincinnati, O   |   |
| Catlery, Importers of.  Boker Hermann & Co., 101 Duane, N. Y.  Boker Hermann & Co., 101 Duane, N. Y.  Boker Hermann & Co., 101 Duane, N. Y.  Selfindmann & Lauteriung, of Chambers, N. Y.  Gutlery, Massifortierer of.  Burtinshaw Aaron, Pepperell, Mass.  Gurness, Bandy Aaron, Pepperell, Mass.  John Russell Cutlery Co., 20 Chambers, N. Y.  Meriden Cutlery Co., 40 Chambers, N. Y.  Do-oxydized Bronze Metals.  Phila Smelting Co., 12th and Noble Sta, Phils.  39 Differential Futlery Blocks.  Yale Lock Mig. Co., 43 Chambers, N. Y.  9 Dinner Pail and Lanterps.  Haight Jos. Portenester, N. Y.  Monings Chambers, N. Y.  40 Discens Tabless.  Jennings S. H. Deep River, Conn.  Leigh E. B. St. Louls, Mo.  Door and Gutz Surlings.  Bartlett Frederick, Freeport, His.  8 Rochack S. & Co., 164 Futlon, N. Y.  Folger A. E. & Co., Springfield O.  Sellers Wm. & Co., Phila and J. Liderty st., N. Y.  Tart Geo. C., Worcester, Mass.  Thorse, De Haven & Co., Philadelphia.  8 Bartics Co., 164 Co., 16 | Smith & Styre Mfg. Co 31 Cortlandt, N. Y   | 1 |
| Boker Hermann & Co., 101 Duline, N. y. 3235 Clatworthy F. & W., 82 Chambers, N. y. 10 Friedmann & Lauteriung, of Chambers, N. Y. 10 Outlery, Mosuforturers of. Burkinshaw Aaron, Fepperll, Mass. 10 Conway F. C., 92 Chambers, N. Y. 10 Furness, Bandley, C., 92 Chambers, N. Y. 10 Lonn Russell Cutlery Co., 92 Chambers, N. Y. 40 Meriden Cutlery Co., 40 Chambers, N. Y. 40 Deox Williams Co., 12 Chambers, N. Y. 40 Differential Futley Blocks. Yale Lock Mig. Co., 43 Chambers, N. Y. 40 Discennt Tables. Jennings S. H., Deep River, Conn. Leigh E. B. St. Louls, Mo. 55 Door And Gutz Surlings. Bartlett Frederick, Freeport, His. 31 Rocback S. & Co., 164 Futlon, N. Y. 40 Door Holis. Delin Holis. Delin Holis. H. New Haven, Ct. 77 Folger A. E. & Co., Springfield O. Sellers Wim. & Co., Phila and J. Liderty St., N. Y. 97 Tart Geo. C., Worcester, Mass.   | Lawrence Curry Comb Co., 30, 222, 25, 2.   | 1 |
| Conway T. C. oo Chambers, N. Y. 11 Furness, Bannister & Co. Newark, N. J. 12 Orcenfield fool Co. Greenfield, Mass. 10 John Russell Cutterfy Co., oo Chambers, N. Y. 40 Meriden Cutterfy Co., 40 Chambers, N. Y. 40 Meriden Cutterfy Co., 40 Chambers, N. Y. 40 Meriden Cutterfy Co., 40 Chambers, N. Y. 40 Metz Paul, 21 Upper Thannes St. London, Eng. 10 The Wm. Rogors Mfg. Co., 41 Chambers, Co., 45 Chambers, M. Y. 40 Dennes Control of | Clatworthy F. & W., 82 Chambers, N. Y.   | l |
| Phila Smelting Co., 12th and Noble Sts, Phils. 33 Differential Pattey Blocks. Yale Lock Mig. Co., 43 Chambers, N. Y. 9 Dinner Pail and Lanterns. Haight Jos. Portchester, N. Y. 40 Discens Tables. Jennings S. H. Deep River, Conn. Leight E. B. St. Louis, Mo. 55 Days and Gutz Suprings. Bartlett Frederick, Freeport, His. 34 Rochuck S. & Co., 164 Fulton, N. Y. 60 Van Wardner & Williams, 32 Beekman, N. Y. 60 Dour Holis. Free Hohes. New Haven, Ct., 27 Prof. Bartlett Suprings. 10 Dour Holis. Rockers of, 50 Dour Holis. S. Co., 164 Fulton, N. Y. 60 Bellers Wim. & Co., Phila and J. Liderty st., N. Y. 35 Taft Geo. C., Worcester, Mass. Thorse, De Haven & Co., Philadelphia. 88   | Burkinshaw Aaron, Pepperell, Man. 19<br>Conway T. C. so Chambers, N. Y. 11   | 1 |
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| Phila Smelting Co., 12th and Noble Sts, Phils. 33 Differential Pattey Blocks. Yale Lock Mig. Co., 43 Chambers, N. Y. 9 Dinner Pail and Lanterns. Haight Jos. Portchester, N. Y. 40 Discens Tables. Jennings S. H. Deep River, Conn. Leight E. B. St. Louis, Mo. 55 Duor and Gutz Springs. Bartlet Frederick, Fresport, His. 34 Rochuck S. & Co., 164 Fulton, N. Y. 60 Van Wardner & Williams, 32 Beekman, N. Y. 60 Door Holis. Fres Hohen. New Haven, Ct., 27 Prof. Co., 186 Full Co., 187 Ful | Metz Paul, 217 Upper Thaines St., London, Eng. 10<br>The Wm. Rogers Mfg. Co., Hartfor i. Ct. 11<br>The Lamson & Goodnow Mfg. Co. St. Chamber   |   |
| Jaconnt Tables.  Jennings H. Deep River, Conn.  Leigh E. B. St. Louis, Mo.  Door and Gate Springs.  Bartlett Frederick, Freeport, Ills.  Rochace S. & Co., ids Fulton, N. Y.  Ovan Wagoner & Williams, & Beekman, N. Y.  Door Holls.  Ives Hobart B. New Haven, Ct.  77  Prilling Machines. Makers of.  Folger A. E. & Co., Springfield O.,  Sellers Wim. & Co., Phila, and g. Lidserty st., N. Y.  Taft Geo. C., Worcester, Mass.  Thorne, De Haven & Co., Philadelphia.  88  | De-oxydized Bronze Metals.   |   |
| Jaconnt Tables.  Jennings H. Deep River, Conn.  Leigh E. B. St. Louis, Mo.  Door and Gate Springs.  Bartlett Frederick, Freeport, Ills.  Rochace S. & Co., ids Fulton, N. Y.  Ovan Wagoner & Williams, & Beekman, N. Y.  Door Holls.  Ives Hobart B. New Haven, Ct.  77  Prilling Machines. Makers of.  Folger A. E. & Co., Springfield O.,  Sellers Wim. & Co., Phila, and g. Lidserty st., N. Y.  Taft Geo. C., Worcester, Mass.  Thorne, De Haven & Co., Philadelphia.  88  | Differential Putter Blocks. Yale Lock Mig. Co., 43 Chambers, N. Y  |   |
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| Door Holls. Ives Hobart B. New Haven, Ct   | Hartlett Frederick, Freeport, Ills   |   |
| Foiger A. E. & Co. Springfield O. Scilers Wm. & Co. Phils. and ; Liderty st., N.Y. 39 Taft Geo. C., Worcester, Mass  | Door Bolts.  |   |
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| Edge Tools Wahen of  | Ives Hobart B. New Haven, Ct. 27<br>Drilling Machines, Makers of.<br>Polg-r A. E. & Co., Springfield O.,<br>Sellers Wm. & Co., Phila, and g. Liderty st., N. Y. 39<br>Tart Geo. C., Worcester, Mass. | ı |
| Doscher M. & Chambers, N. Y  | Ives Hobart B. Now Haven, Ct   |   |
| Crane Bros. Mg. Co., Chicago III   | Ives Hobart B. New Haven, Ct   |   |

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| Elevator Buckets   | Ire              |
| Rowland T. F. Brooklyn. N. Y   | Bo<br>Et         |
| Elevator Buckets. Rowland T. F., Brooklyn. N. Y.  Bmery and Emery Wheels. Ashland Emery Co., Perth Ambov. S. J. Irvine A. A. & Co., 14 Murray, N. Y. Lehigh Valley Emery Wheel Co., Weissport, Pa., 40 Englines, time.   | lre<br>L         |
| Lehich Valley Emery Wheel Co., Weissport, Pa. 40 Englies, tans. Schleicher, Schumm & Co., Philadelphia. 39 Englines (Lacomette Works, Philadelphia, Pa. 6 Englines (Lacomette Works, Philadelphia, Pa. 6 Englines (Lacomette Works, Philadelphia, Pa. 6 Englines & Go., Newark, N. J. Lane & Bodley Co., Cincinnati, O. 38 Tyson Engline Co., Philadelphia. The Norwalk Iron Works Co., S. Norwalk, Conn. 37 Wetherili Robt. & Co., Chester, Pa. 99 Rucets, Brass, Makers of, McNab & Harlin Mfz. Co., 39 Gold, N. Y. 37 Faucets, Self-Measuring, Makers of, Enterprise Mfg. Co., of Pa., Phila. and N. Y. 31 Lane Bros., Millibrook, N. X. 12 Fencing, &cc. Cleveland Wrought Iron Fence Wks., Cleveland, O. 7  | L                |
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| Lane & Bodley Co., Cincinnati, C   | M<br>R           |
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| Fencing, &cc. Cleveland Wrought Iron Fence Wks., Cleveland, O. 7 Files. Importers of.  | 000              |
| Cleveland Wrought Iron Fence Wks., Cleveland, O. 7 Files, Importer of Cleveland, O. 7 Files, Importer of Cloid, N. Y. Files, Manufacturers of Cloid, N. Y. Files, Manufacturers of Cloid, N. Y. Files, Manufacturers of Cloid, N. Y. Auburn File Works, & Chambers, N. Y. Auburn File Works, & Chambers, N. Y. 8 Barnett G. & H., 4s and 4s Richmond, Phila. 8 8 Boynton E. M., & Beekman, N. Y. Clark & Draper, Sing Sing, N. Y. Disston Henry & Bons, Phila. 40 Heller & Bros. Newark, N. J. Hiscox File Mig. Co., West Chelmstord, Mass. 8 Johnson & Bro., i Commercial, Newark, N. J. 8 Nicholson File O., Providence, R. I. 8 Nicholson File Co., Providence, R. I. 8 Spencer J. E. & Son abourgh, N. S. Culion File Works, Battimore, Md. 8  | E                |
| Auburn File Works, 8c Chambers, N. Y   | H                |
| Clark & Draper, Sing Sing, N. Y. Disston Henry & Sons, Phila. 34   | K<br>L           |
| Heller & Bros. Newark, N. J  | L                |
| Nicholson & Bro., i Commercial, Newark, N. J 8<br>NcCaffrey & Bro., 1732 and 1734 N. 4th, Phila  | MNO              |
| Paul Chas. B., Williamsburgh, N. Y.         8           Spencer J. R. & Son. Sheffield, England.         10           Union Flie Works, Baltimore, Md.         8   | P                |
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| Brogner & O'Brien, Philadelphia, Pa. 34 Brooziyn Clay Retort and Fire Brick Works, Van Dyke St., Brooklyn, N. Y. 34  | Ire              |
| Gardner drothers, Pittsburgh, Pa   | L                |
| Kreischer B. & Sons, foot of E Houston St  | Ire              |
| Ostrander James & Son, Troy, N. Y. 34 Perth Amboy Terra Cotta Co., Perth Amboy, N. J. 34   | L                |
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| Cooke William, 6 Cortlandt, N. Y   | H                |
| Keystone Portable Forge Co., 2'8 Carter, Phil39 Forgings, Iron and *teel.  | La               |
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| Richmond & Potts, no S. 4th. Phila., Pa. 5<br>Furnace Hoists.<br>Stokes & Parrish. Philada., Pa. 38<br>Furnace Shields.<br>McDonald H Pittsburgh, Pa. 39<br>Furniture Springs.<br>Cary & Moen. 234 W. 39th. N. Y. 3<br>Garden Teolis.<br>Dunlap C. W. & Co., 43 Chambers, N. Y. 3  | B                |
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| Carv & Moen, 234 W. 29th, N. Y   | Si<br>Y          |
|  | MI s             |
| Charge Bars, Charge Bard & Philadelphia Da   | F                |
| Grindstones. Grindstones. Atkinson B. & Co., Newcastle-on-Type, Eng. Lombur 1 & Co., Boston. ass   | J                |
| Wood Walter R., 283 and 28; Front N. Y   | MO               |
| Gunpowder, Makers of. Kneeland F. L. (Dupont) 70 Wall, N. Y  | P 8              |
| Hammers. Hartford Hammer Co., Hartford, Ct   | M                |
| Havitord nammer Co., Hartiord, Ct. 37  H ndles. Spokes &c. Hundley & Hanzs, 79 Reade, N. Y. Hungers. Hain Deer. Kidder Silde Door Hanger Co., Romeo, Mich. Moore S. H. & E. V., Chicago, Ill. 31 Medina Mfg. Co., Medina, N. Y. 18   | M                |
| Modre S. H. & E. Y. Chicago, Itt   | M                |
| Hardware Commission Merchanis. Horace F. Sise, to Chambers, N. Y. Uraham & Haines, u.S. Chambers, N. Y. Beston & Denckis, sy Commerce. Phila   | BBB              |
| Hymes David & Co., 92 Church, N. Y   | G                |
| Lioyd, Supplee & Watton. 023 Market, Phila, 55 Sheuard Sidney & Co., Buffalo N. Y. 18 Hardware importers. Boker Hermann & Co., 101 Duane, N. Y   | J                |
| Boker Hermann & Co., 101 Duane, N. Y   | S                |
| McCoy & Co. 134 and 140 Duane. N. Y  | Ma               |
| Flagler. Forsyth & Bradley, 87 Chambers, N. Y  | Me               |
| Globe Hardware Co., 5; Beekman, N. Y.<br>Lioyd, Supplee & Waiton, 225 harket St., Phila., Pd. 25<br>Miller's Falls Co., 24 Chambers, N. Y.   | M · K            |
| Russell & Erwin wfg. Co., 45 Chambers, N. Y.<br>Shannon J. B. & Sons, Philiadelphia, Pa  | Me               |
| Stanley Works, New Britain, Conn   | Me<br>D<br>G     |
| Union Mfg. Co., 50 Chambers, N. Y  | N P              |
| Hardware Specialties. Cleveland Wrought Iron Fence Works, Cleveland, 0, 2  | P                |
| Davis Wm. L., Chelsea, Mass  | QRE              |
| Sprague Novelty Works, Rochester, N. V   | Me               |
| Cleveland Wrought Iron Fence Works, Cleveland, O.7. Comiy James, Philadelphis, Pa  | Me               |
| Kimpartin R. P. & Co. Indianapolis Ind.  | MI               |
| liny K nives.  Holt Hiram & Co., East Wilton, Me.  Holt Hiram & Co., East Wilton, Me.  Lyon Nelson, Albany, N. Y.  16  | Mi               |
| Lyon Nelson, Albany, N. Y  | Me               |
| Scovill Mfg. Co., 419 Broome, N. Y   | Ma               |
| Lyon Neison, Albany, N. Y  | Me               |
| The Norwalk Iron Works Co., 5. Norwalk, Conn., 37  | R<br>Na          |
| Box Alfred & Co., 312 Green, Phila   | OR               |
| Sellers Wm. & Co., Phila. and 79 Liberty st., N. Y. 39<br>Stokes & Parrish, Philada., Pa. 38   | Se Z             |
| Hoisting Machines.  Box Alfred & Co., 312 Green, Phila.  Box Alfred & Co., 312 Green, Phila.  Jounn J., Cleveland, O   | Na<br>P<br>Nic   |
| Shannon J. J. Philadelphia, Pa   | W Z              |
| Waldren John, Muncy, Pa  | No<br>N          |
| New York Handle & Mallet Works, 456 E. Houston13 Horse Clippers. Soker Hermanr & Co fol & 101 Duane, N. Y. 28&35 Shannon J. J. Philadelphia, Pa  | Nu               |
| Saranac Horse Nail Co., Vergennes, Vt  | H                |
| Saranac Horse Nali Co. Platisburg, N. Y. 12 Horse Shoes, Makers of. Bradlee & Co. Philadelphia, Pa. 5 Burden Iron Works, Troy, N. Y Bussing A., 4 Warren, N. Y Rhode island Horse Shoe Co., Providence, B. 1. 18 Schoenberger & Co. Pittsburgh, Pa.  | 924              |
|  | Oil<br>B<br>M    |
| Witherow & Gordon, Pittsburgh, Pa  | Or               |
| McLean John, 300 Monroe, N. V.   | L                |
| Dudgeon Richard, 24 Columbia, N. Y   | On P             |
| Hartford Steam Roller Inspection & Insurance Co.   | 0x               |
| The Travelers' Life and Accident Insurance Co.   | Pa               |
| Hartford. Con.  Iron. (Manufacturers' Apents.)  Cox. Jr., Justice & Co., 333 Wainut. Phila.  5 Roffman J. W. & Co., 2051. 4th. Phila.  5 Levis Henry & Co., Philadelphila, Pa.  Lundell Chas. G. (Swedish), Boston, Mass.  4   | H                |
| Levis Henry & Co., Philadelphia, Ps<br>Lundell Chas. G. (Swedish), Boston, Mass<br>From. Manufacturers of  | Pa               |
| From Manufacturers of. Albany & Rensselaer Iron & Steel Co., Troy, N. Y. 32 Allantown Rolling Will Co.   | Ph               |

| Iren Brokers. Boynton Geo. A., 70 Wall, N. Y   | Plat<br>Hal<br>The               |
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| Iron Brokers, Boynton Geo. A., 70 Wall, N. Y   | Plun<br>Eve<br>Peck<br>Bok       |
| Lundeli Chas. G. (Swedish), Boston, Mass   | Pote<br>Idea<br>Pur              |
| Quincy Jonn W. 88 William N. Y. 4 Iron Commission Merchangts Balley J. F. & Co., 52 Wall, N. Y. 4 Heberton & Co., Priladelphia 5 Lundell Chas. 6., Boston, Mass. 4 Mohr J. J., 450 Walnut, Philadelphia 5 Grandson J. O., 320 Dock, Philadelphia 5 Wonardson J. O., 320 Dock, Philadelphia 5 Wonardson J. S. 37 Walnut Phila Iron Bease R., 33 Walnut Phila  | Bra<br>Die<br>Pres               |
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| Carmichael & Emmens, 120 and 123 Cedar, N. Y   | Pull<br>Pen<br>Pro<br>Pum        |
| Egleston Bros & Co., 160 South, N. V   | Hai                              |
| Judson B. F., 457 and 459 Water, N. Y  | Mei<br>Rui<br>Rui<br>Uni         |
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| Naylor & Co., 99 John, N. Y. 32<br>Ogden & Wallace, 8s, 87, 89 and 91 Elm, N. Y. 4<br>Page, Newell & Co., Boston, Mass. 6<br>Herson & Co., 24 Broadway N. Y.   | Cle<br>Cor<br>Mor                |
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| Miller Edw'd & Co., 35 Warren, N. Y  | Basi<br>Mo                       |
| Chadborn & Caldwell Mfg. Co., Newburg, N. Y 16<br>Lloyd, Supplee & Walton. Philadelphia, Pa25  | Ba w<br>Boy<br>Dis               |
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| Johnson, Israel H. Jr., Philadelphia, Pa. 29<br>L. B. Flanders Machine Works, Philadelphia, Pa. 39<br>Lyon E. & Co., 470 Grand, N. Y.  | Bri<br>Mil<br>Ph                 |
| Monawk & Hudson Mrg. Co., Waterford. N. Y  | Sere<br>Wi<br>We<br>Sere         |
| Stokes & Parrish, Philada. Pa  | Bei<br>Royt<br>Bei               |
| Little Chas. E., to Fulton, N. Y   | Sha<br>Sel                       |
| Machiniats' Tools, Blaisdell P. & Co., Worcester, Mass   | Fie<br>Her<br>Hill               |
| Jennings C. E., 66 Chambers, N. Y. Locks and Knobs.—Manufacturers of. Bohannan Wilson, Broadway and Kossuth, Brook ivn. E. D. C. Branford Lock Works, Branford, Conn. Ivn. E. D. C. Werks, Branford, Conn. Ivn. E. D. C. Werks, Branford, Conn. Ivn. E. Branford Lock Works, Branford, Conn. Ivn. E. Branford Lock Works, Branford, Conn. Ivn. E. Branford & Wolf, Ivn. S. 8th. Philadelphia. Ivn. Hillebrand & Wolf, Ivn. S. 8th. Philadelphia. Ivn. Branford, Co., ct Chambers, N. Y. Ivn. E. Branford, Co., ct Chambers, N. Y. Ivn. Branford, Co., ct Chambers, N. Y. Ivn. Box Alfred & Co., ct Chambers, N. Y. Ivn. Box Alfred & Co., ct Chambers, N. Y. Ivn. Box Alfred & Co., ct Chambers, N. Y. Ivn. Box Alfred & Co., ct Chambers, N. Y. Ivn. Box Alfred & Co., ct Chambers, N. Y. Ivn. E. E. & Co. 130 Centr. N. Y. Ivn. Box Alfred & Co., Co., Manchester, N. H. Ivn. Branders Machine Works, Philadelphia, Pa. Ivn. E. E. & Co., 130 Centr. N. Y. Ivn. Branders Machine Works, Philadelphia, Pa. Ivn. E. E. & Co., 130 Centr. N. Y. Ivn. Branders Machine Works, Philadelphia, Pa. Ivn. E. E. & Co., 130 Centr. N. Y. Ivn. Branders Machine Works, Philadelphia, Pa. Ivn. E. E. & Co., 130 Centr. N. Y. Ivn. Branders Machine Works, Philadelphia, Pa. Ivn. E. E. & Co., 130 Centr. N. Y. Ivn. Branders Machine Works, Philadelphia, Pa. Ivn. Branders Machine Works, Philadelphia, Pa. Ivn. Branders W. & Co., Dhila, and 79 Liberty st., N. Y. Inchine Screws. Makers of. Fellows John, Williamsburg, N. Y. Ivn. Branders W. Y. Ivn. Branders W. Y. Ivn. Branders W. Y. Ivn. Brankers W. Y. Ivn. Branders W. Y. I | She:                             |
| J. Gray Machinery Depot, 37 Dey. N. Y. 27 King J. M. & Co., Waterford, N. Y. 6 Marcellus C. N. & Co., 91 Liberty, N. Y.  | Sho<br>Spa<br>Sno<br>Gri         |
| Sellers Wm. & Co., Phila. and 79 Liberty st., N. Y., 39<br>Stockwell Screw & Machine Co., Cleveland, Ohio., 36<br>Mailets.<br>N. V. Handle and Mallet Works, 4c6 E. Houston13  | Shu                              |
| Measuring Tapes.   | Sme<br>Ph<br>P<br>Rec            |
| Beni Chitera.  Kimball Shovel Co., Baltimore, Md   | Ro<br>Vei                        |
| Metnis, Dickerson, Van Dusen & Co., 29 and 31 Cliff. N. Y 2 Gold-mith Moses & Son, Charleston, S. C  | Spei<br>Ost<br>Spei<br>Ma<br>Oss |
| Metals, Dickerson, Van Dusen & Co., 29 and 31 Cliff. N. Y 2 Gold-mith Moses & Son, Charleston. S. C 4 Naylor & Co., 99 John. N. Y 32 Northrop A. C., Waterbury, Conn. 2 Pheips, Dodge & Co., Cliff, bet. John & Fulton, N. Y. 2 Phosphor Bronze Smelting Co., Limited, 2036 Washington zv. Phila.  | Spic<br>Wi<br>Spo<br>Ho          |
| Purves A. & Son, cor. South and Pean, Phila  | Bor                              |
| Phetpa, Dodge & Co., Cliff, bet, John & Fulton, N.Y. 2 Phosphor Bronze Smelting Co., Limited, 2058 Washington ev., Phila. 7 Purves A. & Son, cor. South and Penn, Phila. 5 Quince J. W. R. & Co., 2054 Walnut, Phila. 5 Seneral Dr. W. R. & Co., 2054 Walnut, Phila. 5 Scheen of the Halifax, Novo, 458 63 95 20th, N.Y. 2 Scheen of the Halifax, Novo, 458 63 95 20th, N.Y. 2 Metally Perforated Sheet. Harrington & Oglesby, Chicogo, Ill. 33 Metalluggists.   | Ed<br>Gas<br>Ros                 |
| Booth, Garrett & Blair, 919 Chant, Philadelphia 5 Sritton J. Biodgett, 330 Walnut, Philadelphia 20   | Die<br>Du<br>Btes<br>Car         |
| Mine Lamps. Leonard Brot. Scranton. Pa   | Cla<br>B<br>Cra<br>Mei           |
| E. Stebbins Mfg. Co., Brightwood P. O., Spring.  | Pul<br>Bio<br>The                |
| field, Mass.   | Val                              |
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| Nail Machinery, Pittsburgh Mfg. Co., Pittsburgh, Pa38 Nickel Pinters' Supplies.  | Re                               |
| Nalis. Fuller Bros. & Co., 139 Greenwich, N. V. 4 Oxford Iron Co. & Washington, N. Y. 4 Oxford Iron Co. & Washington, N. Y. 4 Evidence of the Co. & Washington, N. Y. 4 Experimental of the Co. & Washington, N. Y. 4 Experimental of the Co. & Washington, N. Y. 4 Experimental of the Co. & Pittsburgh, Pa. 5 National Machinery. Pittsburgh Mgs. Co., Pittsburgh, Pa. 5 Nickel Pinters' Supplies. Condit, Hanson & Van Winkle, Newark, N. J. 17 Wharton Joseph, Polladelphia, Pa. 17 Zucker as Levett, Sp. to 4st West toth at. N. Y. 27 Naylor & Levett, Sp. to 4st West toth at. N. Y. 27 Naylor & Co., 99 John. N. Y. Rowland Wm. & Harvey, Frankford, Philadelphia, 40 Nuts. Holts, etc., Makers of, Allentown Holling Mill Co., Allentown, Pa. 5 Atwood Safety, Nut Co., Springfield, Mass. 5 Haskell W. H. & Co., Pawtucket, R. 1 Standard Nut Co., Pittsburgh, Pa. 5 Sternbergh J. H. Roading, Pa. 5 Sternbergh J. H. Roading, Pa. 5   | ne                               |
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| German Silver Sheets over 12in. wide and weighing<br>core than to 28., \$2.00 & b.<br>Advance 2c. for each additional inch in width above<br>2 ln., and 2c. & 2 on each No. thinner than Nos. 26 to  | Bla   |
| 2 in., and 2: 4 B on the Ro. thinner than No. 36 is Platers, at<br>All German 3i ver thinner than No. 36 is Platers, at  | Bla   |
| 6, inclusive All German Silver thinner than No. 36 is Platers, at All German Silver Scrap one-half less than net price of Lin. E. wide Metal. German Silver Turnings, Filings and Chips. Balf the price of Scrap. Glddyn and   | Blu   |
| High Brass, Low Brass, Copper,   | Car   |
| 0.22   | Gre   |
| 0,25   | Iro   |
| 0.27   |   |
| 0.31   | Min   |
| 0. 14 .75 4.63  Spring Wire 2c & B advance. Flat, Square and Half Round Wire 4c & B advance  | Red   |
| n Round Wire.  | Ros<br>Blei                                 |
| Fire Brass Rods, No. 5 and larger, not less than 2 feet m. ins. 38c. Wire straightened and cut, smaller than No. 8, and  |   |
| n./c.bs. 38c.<br>Vire straightened and cut, smaller than No. 8, and<br>of less than 2 feet lengths, 4pc.<br>Wire and Rods less than 2 feet lengths, special rate/.<br>Twelve cents per h extra for spooling on 1 h spools,<br>priscil.LNEOGS.  | Um  |
| rass Pall Ears   |   |
| igh Brass Scrap  | Ver   |
| Turange, citings and Chips half the price of Scrap.<br>Ferms—Net cash. Interest to be added after thirty<br>was.   | Ver   |
| Terms—Net cash. Interest to be added after thirty aye.  Terms.—dis 20 5  # Bove 3 in.  \$21, 24, 25, two cents advance on List for each Number 21, 25, 25, four cents advance on List for each   | Ver   |
|  | Wh<br>Wh<br>Yel                             |
| os. 21, 22, 23, two cents advance on List for each<br>Number.<br>St. 21, 25, 20, four cents advance on List for each   | Wh<br>Wh<br>Yel                             |
| Number.<br>26, special rates.  | Wh<br>Wh<br>Yell<br>Yell<br>Zine            |
| Number. Joyo No 26, special rates. alu, § linch  | Wh<br>Wh<br>Yel                             |
| Number. Joyo No 26, special rates. alu, § linch  | Wh<br>Wh<br>Yell<br>Zine<br>Line<br>Bles    |
| Number. Dove No 26, special rates.  alto, 14 inch  | Who Who Yell Zino Sign Bles Sign Woss Drill |
| Number. Joyo No 26, special rates. alu, § linch  | Who Who Yell Zino Bles Sign Prin Ro         |

|     |  | ×   |
|-----|--|-----|
|     |  |     |
|     | Per cent   | 1   |
|     | 4 Per cent   | 4   |
| d   | 79 60  | 4   |
| 30  | 15 "   | 7   |
| B.  | 79 4   |     |
|     |  |     |
| 00  | STEELDETY: Bars, Ingots, Sheets and Couvalued at 7 cents @ B., or under, 244 cents; over, cents, and not above it, 3 cents @ B. over it, 3 cents @ B.    | 100 |
| 00  | cents, and not above it, 3 cents ? h; over it, 3 cent  |     |
|     | Railway Bars, in part Steel, 1 cent & D. Provided  | å   |
| 00  | Hossemer or pneumatic process, of whatever form of   | l   |
| 10  | description, shall be classed as   |     |
| 00  | American Cast Steel.   |     |
|     | For American Steel see quotations under heading of Pittsburgh.   |     |
| 0 0 | ### Best Cast.  ### Best Cast.  ### Best Cast.  ### Best Cast.  ### Builder and ### Best Double Shear.  #### Best Double Shear.  #### Best Double Shear.  ###################################  |     |
| 0   | Best Cast # 15 15  | į   |
| 0   | " Round Machinery, Cast 9 % roc  |     |
| 0   | Swaged, Cast   |     |
| - 1 | " Blister, 1st quality # 15 130  | ١   |
| 0   | German Steel, Best B Ice   |     |
|     | German Steel, Best. \$ 150  ad quality \$ 150  ad quality \$ 150  beet Cast Steel, 1st quality \$ 1515  ad quality \$ 1515  ad quality \$ 1515  ad quality \$ 1515  beet Cast Steel, 1st quality \$ 1515  adquality \$ 1515  adquality \$ 1515   | ,   |
| e   | " adquality \$ B 14)6  | d   |
| 000 | 3dquality W 124  | 9   |
| 2   | ANTIMONY See Trade Report  | į   |
| 1   | LEAD.—Dery Pig 82 % roo Bs: old Lead, 1540 3 & Pipe and Sheet, 1540 \$ \$ \$.  |     |
| -1  | American   | b   |
| 1   |  |     |
| 1   | Tin Lineq Pipe   |     |
| 1   | Tin Linea Pipe   Sec. dis 10 5 Sheet   Sec. dis 10 5 Shot   Sec. d |     |
| 1   | BABRITT METAL,   |     |
| 1   | N. P. U  |     |
|     | A. 260; B. 200; C. 160.  |     |
|     | TIN.—Dutt: Plates, Sheets, Tagger and Terne, t.ic #<br>b: Elecro-galvanized Plates, zc # b: Manufactures<br>of, not enumerated, 35 per cent. ad. val. Bars, Block<br>and Pigs free. Banca, subject to duty of zo per cent.   |     |
| 1   | of, not enumerated, 35 per cent. ad. val. Bars, Block and Pigs free. Banca, subject to duty of to per cent.  |     |
| 1   | FORMULE W 45 TO AUG  |     |
|     | English  |     |
| 1   |  |     |
| 1   | I C 10X14 Prime Charcoal   |     |
|     | IC 12X12 "   |     |
| 1   | 14X20 Charcaal8.25   |     |
| 1   | I X 12X12 " 8.4"   |     |
| 1   | X   10X   1  |     |
| ı   | COKE TIN PLATE-  | l   |
| ١,  | Best, Ordinary.  |     |
| li  | C 10X14  |     |
| P   | C 12×12 6.25 5.75  |     |
| ı   | TERRE PLATE.  Prime Char. 3d quat.  Core.  Core.  \$1,320  |     |
| 1   | O 11X30 81.50 4.25 5.00 8 5.25   |     |
| 13  | X 1,1X30, 7.40<br>U 20X28 11.40 11.00 10.40  | l   |
| 1   | X 20X28 15.50  | l   |
| i   | G 13 120 St. F. All mist   | l   |
|     | M91.DKR  | ı   |
|     | PELTEM-DUTY: In Pigs, Pars and Places, \$1.40 \$   | l   |
| A   |  |     |
| I   | ehiga, on spetse   |     |
| 2   | INC DUTY: Pig or Block, Lgo P mo be. Shee:   |     |
| -   | INCDUTY: Pig or Block, 1.90 P and he. Sheet also W h. heet, Cask   |     |
| -   | " Open   |     |
|     | -  |     |
|     | Paner Stock &c.  |     |

|   | Paper  | Stock,                     | &c.  |
|---|--|----------------------------|--|
|   |  |                            |  |
|   | (Dealer  | s' Selling Price           | ce.)   |
| Mill<br>Unbl<br>City<br>New   | Assorted Whites<br>leached Muslins<br>Whites, No. 1<br>Canton Flannels<br>Seconds, light   | No. 2                      | 514 6<br>614 6<br>426 6<br>6   |
| Cotto<br>Line<br>Secon<br>Color<br>Mani   | c. Whites  |                            | 3 6 3 4 4 6 4 4 6 4 6 6 6 6 6 6 6 6 6 6  |
| Kent Burls Tar S Hem) Hard Soft White Mixed Ledge Solid N Pure Bogus Comm Binde | ucky Bagging, ap Bagging, so, i inakings, p Twine Stock. White Shavings, b Stock, so Stock, No. 1, lightweepapers Manilus, and Hanons.  18' Board Cutting Stock the Control of the Control | No. I. No. I. Soft. white. | 494 66 2 2 2 6 4 2 2 6 2 2 6 2 2 6 2 2 6 2 2 6 2 2 6 2 2 6 2 2 6 2 |
|   |  | -                          | -  |

#### Paints, Oils, &c.

| 0   |  |
|-----|--|
| 3   |  |
| 2 8 | Paints.  |
| 9   | Black Lamp. Coach Painters * 5 2   |
| 0   | 1 Ivory Drop, fair 12 @ 1  |
| ı   | Ivory Drop, fair.   12 (2)   |
| 9   | Blue Chinese dry   |
| 1   | " Ultramarine  |
| 3   | Carmine, 40  |
| 7   | Green, Chrome  |
| 5   | " in oil " 300; 4  |
|     | Brown  |
| i   | B Purple Dil Belght Red  |
| 5   | Red  |
|     | Brown # D 45   |
| ì   | Mineral Paints   |
| -   | "Paris. Rood 24c best, 3 "in oil. Rood 24c best, 3 "in oil. Rood 24c best, 3 "in oil. Room Paint, Bright Red. Room 1 "b b b s s s s s s s s s s s s s s s s  |
|     | " Venetian (N. C.) dry   |
|     | " Indian dry   |
|     | " Indian dry   |
|     | Burnt  |
|     |  |
|     | Umber, Barat   |
|     | ** Raw   |
|     | Vermillion, Chinese.   |
|     | I LLUMIN   |
|     | White Lead, American, pure dry   |
|     | White Lead, American, Jonanon White Lead, American, pure dry White, Parls, English, prime is a bits, 3 to 7 to   |
|     | in oil asst'd cans, ne ; kegs, d   |
|     | Yellow Chrome  |
|     | Zinc White American No. 1, dry   |
| ĺ   | French (Paris)   |
| i   | Olin.  |
|     | Floring United to make and table   |
|     | Bolec   Signal   Si |
| 1   | Elephant 6   |
| ı   | Signal 60  |
|     | No. 1  |
| l   | West Virginia  |
| ĺ   | Drilling   |
|     |  |

| 1   | 25   | undries.  |   |  |   |
|---|--|---|---|--|---|
| Benz<br>Chair<br>Dryer<br>Frost<br>Glue,<br>Glazi<br>Gum,<br>Chari<br>Gum,<br>Chari<br>Gum,<br>Chari<br>Gum,<br>Chari<br>Gum,<br>Chari<br>Gum,<br>Chari<br>Gum,<br>Chari<br>Gum,<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Chari<br>Cha<br>Cha<br>Chari<br>Cha<br>Cha<br>Cha<br>Cha<br>Cha<br>Cha<br>Cha<br>Cha<br>Cha<br>Cha | rge, Englishal Wool<br>Stone, selected L<br>powdered.,<br>in bladders<br>in bulk   | ark<br>umps   | t cans,   | 10½C;  | keg. (423 @ 444 64 64 64 64 64 64 64 64 64 64 64 64 |
| Spirit  | Turpenting   |   |   |  | 40  |
| Whiti   | ng Spanish   | lnss.   |   | 0 900  | 74  |
| White   | ng Spanish6  | ilnss. vindow gi  | A88.<br>If 50 fee   |  | 74  |
| White   | ng Spanish6 FRENCH V Prices curren   | ilnss. vindow gi  | A88.<br>If 50 fee   | t.   | 4th.  |
| 6 x 8 11 x 14 15 x 16 x 26 x 26 x 36 x 36 36 x 46   | ng Spanish   | Inss. VINDOW GL # per box o  kDiscou  15t.  8 6 50 7.35 9.25 10.05 11.75 13.24 14.00 15.40 15.40      | A88.  of 50 fee  nt 60 %  ad. 1   | t.   | 4th.<br>\$5.2<br>6.0                                |
| 6 x 8 11 x 14 15 x 16 x 26 x 26 x 36 x 36 36 x 46   | ng Spanish.  Prices curren  Single Thic  SIZE.  10 10 X 15.  10 24 X 30.  10 24 X 30.  10 30 X 50.  10 30 X 50.  10 31 X 50.  10 31 X 50.                            | Inse. VINDOW GL 4 per box o  k. —Discou  18t.  8 6 50  9 25  11.75  12.70  15.24  14.60  15.90  17.40 | A88.  of 50 fees  nt 60 %  ad.    8 5.75  0.75  8.50  9.25  10.05  13.75  12.50  13.75  15.00   | 3d.<br>\$ 5.50<br>6.25<br>7.75<br>8.25<br>9.00<br>9.60<br>10.50<br>11.25<br>12.50<br>13.25 | 4th.<br>\$5.2<br>6.0                                |
| 6 x 8 11 x 14 15 x 16 x 26 x 26 x 36 x 36 36 x 46   | Spanish  Frices current  Single Thic  SIZE.  10 10 X 15. 10 10 X 24. 10 20 X 33. 10 24 X 36. 10 30 X 56. 10 30 X 56. 10 30 X 56. 10 31 X 66. 10 31 X 66. 10 31 X 66. | Inse. VINDOW GL 4 per box o  k. —Discou  18t.  8 6 50  9 25  11.75  12.70  15.24  14.60  15.90  17.40 | 2d. 1 | 3d.<br>\$ 5.50<br>6.25<br>7.75<br>8.25<br>9.00<br>9.60<br>10.50<br>11.25<br>12.50<br>13.25 | 4th.<br>8 5.2<br>6.00<br>7 2                        |

| SIZES.   | 181.   | ad.                   | зđ.  | 4th. |
|--|--|-----------------------|--|------|
| 6 x 8 to 10 x 15.  11 x 14 to 16 x 25.  11 x 14 to 16 x 25.  15 x 25 to 25 x 25.  15 x 35 to 24 x 25.  15 x 35 to 24 x 35.  15 x 35 to 24 x 35.  15 x 35 to 24 x 35.  15 x 35 to 25 x 25 to 25 x 35.  15 x 35 to 25 x 25 to 25 x 35.  15 x 35 to 25 x 25 to 25 x 35.  15 x 35 to 35 x 35 to 25 x 35.  15 x 35 to 35 x 35 to 35 x 35.  15 x 35 to 35 x 35 to 35 x 35.  15 x 35 to 35 x 35 to 35 x 35. | \$ 8.25<br>10.00<br>12.75<br>14.25<br>15.25<br>10.25<br>17.40<br>18.90<br>19.50<br>20.40 | 11.75                 | \$ 7.40<br>8.74<br>30.74<br>31.74<br>12.40<br>13.00<br>14.25<br>14.75<br>10.25,<br>18.00 |      |
|  | 23.00  | 21.00                 | 20.00  |      |
| An additional to per cent.  Glass more than 40 inches inches in length, and not mal aches will be chart of in the  | will b<br>wide.  | e char<br>Any ore the | ged for  | nite |



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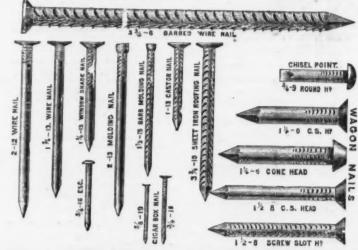
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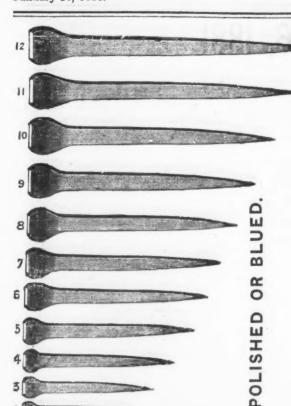
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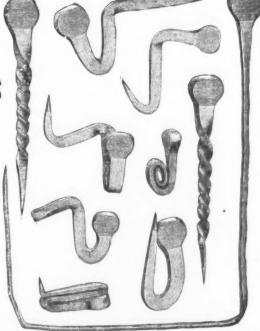
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CY,

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Phosphor-Bronze is daily gaining favor with manufacturers who have to use a metal of great toughness and durability, of fine grain, high tensile strength and duetility, and is acknowledged far superior to any other alloy on account of the readiness with which it takes a polish, its elasticity, fluidity and beauty of color. Its high price, however, has so far prevented the use of it to so large an extent as its merit would warrant. For the first time an article is offered herewith which makes it easy for everybody to manufacture his own Phosphor-Bronze of the grade it is wanted, by the simple process of meeting. This article is PHOSPHOR-TIN. By melting a very small quantity of it with copper an excellent Phosphor Bronze is obtained at a much cheaper price than the ready made Phosphor-Bronze can be had in the market. A trial ought to be made by everybody who is using it.

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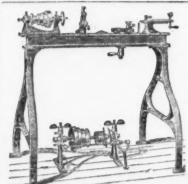
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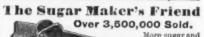
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| HARDWARE.  | K              |
|--|----------------|
| A nvils.   | 71             |
| Wright's   | L              |
| Wilkinson's  | P              |
| Augers and Bits. Con. Valley Mfg. Co   | P<br>M<br>L    |
| Douglass Mfg. Co   |                |
| Brecher (French, Swift & Co) dis 40 % from list of   | 6.             |
| Nobles Mfg. Co   | -              |
| K ss.m's Patent  | In<br>Lo       |
| " B. Machine   | 8              |
| " Jenning's Bits   |                |
| Russell Jenungs' Auger, Dowel, Machine-<br>Dowel and Hand-Rail Bits  |                |
| Russeli Jennings Car and Machine Bits, Boring-<br>Machine and Millwrignts' Augers dis 26210&10&10<br>Imfaction Jenning's Bits  |                |
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| Mo se's Bit Stock Drill  | Bi             |
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| Patent Sewing, Short   | LINK           |
| A wis, Brud Sets, &cc.  Awis, Sewing, Common gross \$1.70—dis 24&10 \$  wis, Sewing, Common gross \$4.70—dis 24&10 \$  shouldered 1'3s gross 245—dis 24&10 \$  for dis 24&10 \$  | Et<br>Sa<br>St |
|  | Bp             |
| " Handled Brad \$7.00 # gross—dis 20&10 %  | U.             |
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| A x = a.  3  | E.             |
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| Cone's   Cone   Con   |                |
| Bl acksmiths', Common dis 45 \$  |                |
| Moulders' dis 255 H and Bellows List of Dec. 1, 1870, net Belting. Rubber: Decking Co. new list net  |                |
| M. I. Delting and America  | Га             |
| ### Bit Helders.  Extension, Barrier's.  #### dos #15.00—dis 40% 5  ### dos #15.00—dis 40%  #### dos #25.00—dis 40%  #### dos #25.00—dis 40%  Angular.  ###################################  |                |
| Blind AdjustersDomestic dos 83.00, dis 15 5  | [pv            |
| Blind Fasteners.  Mackreil's per dos. pairs, \$1.00. dis 105 Van Sand's No., 2000, per gross. \$10.00. dis 105 old patters \$2.00 gross. \$10.00. dis 105 Washburn's Patent \$2.00 \$10.50 net Weniman 5 usw list net aackreil's \$4.00 pairs, \$0.05, dis. 105 Blind Fasteners.   | 61             |
| Washburn's Patent  | 6              |
| Blind Staptes.  Barbed, & in. and larger   | No             |
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| Hiseks. Differential Pulley Blocks   | -              |
| Stanley R. & L. Co., Rope and Iron Strap'ddis solt of 1 Holts. Cast I (on Barre), Shutter, &c  | Gle<br>Pla     |
| Cast I on Chain (Sargent's list)   | Ale<br>Bo      |
| Wrought Farrel   | Inc<br>Sel     |
| "Brass Knob."dis 20210 \$  Sargent's list  | Fr             |
| B. K. Flush, Con'u Stanley's. dis 4087 985 Ex. Heavy   | Per            |
| Stanley R. & L. Co., Rope and Iron Strap 9 dis 40210 t [180 tis.] Cast I to a Barrel, Shutter, &c dis55 tio 5 Cast I to Chain (Sarreat's list) aux 7-2610 5 Bush's Lever and Chain Botts dis 402 to 5 Bush's Lever and Chain Botts dis 60210 t   | Cal            |
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| R. B. & W., new listdis  | Con            |
| Stove_am-rican Screw Co.'s. dis 40 5  " R. E. & W dis 40  " dis 40;  " dis 45;   | W.U            |
| P. R. B. & W   | Bri            |
| Hering Machines. Uprigat. Angular. First quality, no Augers8.5.2 Phillips with Augers6.50 Possible with Augers6.50 Possible with Augers  | Wa             |
| Phillips with Augers 6.40 7.60 net<br>Braces.  | Car            |
| Wilson Mrg. Co. dis 10 % Barber's dis 40 % Stoofford's Patent dis 40 %   | 16             |
| Noble's Patent dis cost 5 l'ves' Patent Braces dis cost 6 Common ball (american).  | Pin            |
|  | Fita           |
| Brackets —Shelf (Sargent's)  | Lav            |
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| Fast Joint Narrow  | Parliamett Butts   | B                                 |
| American Spiral Spiral Butt. Co., Jap'd. dis at a generican Spiral Spira | V. Names discourse   |                                   |
| ## Botchkiss*   10w   1st   net   ## Sarrent # Co *   4st   5st    | Loose Pln. Wrt   | 51                                |
| ## Botchkiss*   10w   1st   net   ## Sarrent # Co *   4st   5st    | Geer's Spring and Blank Butts. dis 2x 5 Sabin Mig. Co.'s Double Acting dis 3x 5 Sabin Mig. Co.'s Double Acting dis 3x 5 Union Sprins Jspanned. dis 2x 5 Union Sprins Hinge Co.'s. dis 2x 5 American Spring Hinge Co.'s. dis 2x 5 Union Mig. Co. dis 2x 6 Bomme: 's. dis 2x | Se Pi Be Co R: R: B.              |
| ## Botchkiss*   10w   1st   net   ## Sarrent # Co *   4st   5st    | Failing   Control   Cont   | Mi No Bi Ad W Do                  |
| Butchers' Cleavers.  Rumanon & Benkley Mr. 60. dis 205 Bradley's. dis 268.55 Bradley's.  | Hunter Clark Nos. 1, 3, 4 dis 70 a dis  | B!                                |
| Can Openers  | Butchers' Cleavers.  | Ha                                |
| Lyman   Lyma   | Can Openers.  Messenger's Comet  | A                                 |
| Cotton   | Lyman* .   | A.C. St.                          |
| Cotton   | U. M. C., F. C. trimmed  | MI St.                            |
| Cotton   | E. B. 1-10. Trimmed  | W                                 |
| Description of the property of | Cottondis to \$  | W<br>Ha                           |
| Chans.   | Bednew list July. '80, dis 31-810 % Piate and Shallow Socket '' dis 31-810 % Deep Socket '' dis 21-820 %   | Ke sa Ti                          |
| White  | Humason. Beckiey & Co.'s   | Br<br>Do<br>Br                    |
| Chieses.  Socket Framing. Crossman   | German Haiter Chain, New list Oct. 25, 79. dis so 5  | Fr. St. Fr. W.                    |
| Tanged Firmers extra   | White  | En J                              |
| Tanged Firmers extra   | Arington Edge Tool Co dis 6,275 \$ Bucs Bros new iist. dis 25,45 \$ Wisnerby Tool Co dis 6,210 \$ Wisnerby Tool Co dis 6,210 \$ Douglass dis 6,210 \$ Firmers. Crossman dis 6,25 \$ Arington Edge Tool Co dis 6,25 \$ Buck Bros new list dis 24,5 \$ Buck Bros new list dis 24,5 \$  | E.<br>Nic<br>Ms<br>He<br>Hi<br>J. |
| Don, Providence Tool Co.'s, Wrt. Iron. dis 35 % Adjustable, Gry's. dis 25 % dis 26 % | Corner.   dis oction   | Wis Fis Mo                        |
| Norway or Best   | Con Physics Control Control Tools West Tools Africa  | Pe Ea                             |
| Cocks. Grass.  Cocks. Grass.  Colore and Bos.  Lie and Beer.  Cocks.  Colore Mills.  Board and Box.  Lorease Wilson's.  Lorease | "Carriage Makers', Sargent's dis 642to \$ "Cord and Tape (T. & S. Mfg. Co.). dis 30 \$ Ulips. Axie. Norway or Best dis 402to \$ Superior dis 452to \$ "Cord I Hods.  | Eu<br>Cre<br>Sta<br>Cre           |
| Coefee Millia.  Board and Box  |  | Ge<br>Cr                          |
| Combined Dinner Pail and Lantern.  Per dos &1.00   | Coffee Mills.  Board and Boxnew list, Jan., 1880, 413 3525 5  Increase Wilson'snes   | Bu<br>Bu<br>Ha                    |
| Semis & Call Co. ** Dividers. dis cock s  "Compasses & Callipers. dis cock s  Wing & Inside or Outside dis cock s  "Double. dis co cock s  Cook's. dis co cock s  Excelsion. dis co cock  Excelsion. dis cock  Exc | Combined Dinner Pail and Lantern.  Per dox \$14.00   | En Am                             |
| Bradley's  | Semis & Call Co, * Dividers   dis cock &   | G Wi                              |
| Cast Steel. # B 84c from Steel Points. # B 84c from Steel Points. # B 64c from Steel Points. # B 64c from Steel Points. # B 64c from Steel Points I feel from Steel Feel from Steel Feel from Steel fr | Bradley's  | Na.<br>"B<br>"E<br>"D             |
| Curry Compac   | Cast Steel # B 84c<br>(ron. Steel Points # 5 64c<br>Curfing frons, &c.<br>& %, % in. \$1.80 2.00, 2.40   | Tin<br>Far                        |
|  | Curry Comes  | G<br>U. 1                         |

|               | resait i rices,  |           |
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|               | Cutierv. Meriden Cutiery Co. (Table)net  | -         |
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| 2 2 2 E E E E | Dog Colings.   | -1        |
| 5565          | Embossed Gilt  | 1         |
| 66666         | Torrey's Rod.   # dos \$2.10, dis 10 5   |           |
| 5 6           | Warner*   Gen (Coi)-  No. 1, Large, Japanued   |           |
| 5 1 5         | No. 2. Small.  Challenge (Coll)—  Nos. 9 7 6  Japanned   | -         |
| 5525          | Galvanized # dos 3.50 4.00 4.00 Nickeled # dos 4.00 5.00 7.00 Star(Coil)—For Cop'd. Nickel-Plated. &c. nee list.   |           |
|               | No. 5, Screen Door Size  |           |
|               | Sabin's Crown,   |           |
| 2000          | Barker's Coucealed   |           |
|               | Antineton Edge Tool Co die 6chro d   |           |
|               | Armagon 180 (1 dis oca 5 dis oca 7 d   |           |
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|               | " Whitney's  |           |
|               | Wilson's Drill Stocks  |           |
|               | Drill Chucks, Mor Beach Patent dis 30 % Adjust. each Stoor, dis30 % Oanbury Stoo dis 30 % Stoo dis 30 %  |           |
|               | Dandury  |           |
|               | Familyper gross \$15; per doz., \$1.5c net<br>Elevator Buckets.<br>Mill E. Buckets, light, 31/4 to 10 in. (Duc's Improved)   |           |
|               | # 100 \$15,00 @ \$54,00, net  Mill E. Buckets, heavy, 5 to 10 inches (Duc's Improved)  # dox \$5,60 @ \$10,20 net  | 1         |
|               | Storehouse, Duc's Patent) 22 to 17, \$12.00 @ \$20.00not<br>Emery and Emery Paper.<br>Genuine Chester—Regular Nos  | ١         |
|               | *  | l         |
| -             |  |           |
|               | Weilington Mills, Grain  |           |
|               | Excelsior Mills, Regular Nos., Grain in Regs \$5 cc.  Flour and FF \$5 dc.  Golden and Fi \$5 dc.  Wellington Mills, Grain \$5 dc.  Wellington Mills, Grain \$5 dc.  Flour \$5 dc. not  Hampden Emery Grain \$5 dc. not  E. & A. Emery Paper dis 2062; \$5  Knameled and Tinned Ware.  Rettles   |           |
| -             |  |           |
| -             | Escutcheon Pins.  Iron   | ľ         |
|               | Recutcheens. Door LocksSame discounts as Door Locks Reass Thread   |           |
|               |  |           |
|               | Pancets.   |           |
|               | Frary's Fatont Fetroleum. dis 20210 \$  Wood and Metallic dis 40 \$  West's Patent Key. dis 45 \$  Wetallic Key, Leaher Lined. dis 40 \$  Cork Lined. dis 40 \$  Enterprise (Self Measuring). \$  # doz, \$50.00, dis 25 \$  Felloe Plates. \$  # D loc, dis 10 \$   | 1         |
| -             | Fellos Plates  |           |
|               | Files.   |           |
|               | Nicholson  | 1         |
|               | J. & Riley Carr. 4.50 to 2  Johnson & Bro. dis 30 5  sutcher's 4.50 to 2  Walter Spenger & Co.'s "Diagnond" 4.50 to 2  |           |
|               | Visher's   | 1         |
| -             | Limet & Co. (French)   |           |
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| Hammers. Cheney's H. Hammonds  | new list July  | * 30, "Bo)   |  | 118 25 %  |
| Humason & Bec<br>Verree  | Nos. 1, 2, 3, 8  | 1.24, 1.50 and   | 1 2 75, dis  | 118 : 5 %   |
| Wilkinson's Sm. Hand Cuffs Providence Tool Tower's   |  |  | ₩ dox }  |   |
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| Bronsed Iron Di<br>Jap'd Store Doo<br>no Plate, \$0.87.<br>Barn Door.<br>Wrought Chest.<br>Surface Chest. S  | ron Latches<br>r Handles—!<br>argent's list  | # doz #0.7<br>iuts. \$1.61;<br>per do                                    | Plate \$1<br>Plate \$1<br>18 \$1.40, 6<br>dia 6                                  | 118 10 %<br>.08<br>118 10 %<br>118 10 %<br>0&10 &   |
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| Tangers. Barn Door, old p New Nevelty. Challenge Climax (Anti-Fr Sterling Improv Cheritree Kidder's U. S   | atterns<br>England<br>iction)<br>ed (Anti-Fric   | tion)  | elb  | 14 £10 \$ 14 £10 \$ 14 £10 \$ 14 £10 \$ 14 £10 \$ 14 £10 \$ 14 £10 \$ 14 £10 \$ 14 £10 \$   |
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| notchkiss'Andrews'   | *************  |  | dis o  | 18 10 %<br>18 40 %<br>18 40 %<br>18 10 %<br>18 10 %<br>18 10 %  |
| Shingling, Nos. Claw, Nos. Lathing. Nos. Hunt's. Shingling, Nos. Claw. Nos.  | 1 2 3<br>1 2 3<br>1 2 3<br>1 2 3<br>1 2 3  | ₩ dos \$7.2  | \$8.00<br>8.40<br>8.00<br>dis  | 88.75   |
| Burd's Shinging, Nos. Claw, Nos. Lathing, Nos. Yerkes & Plumb Shinging, Nos. Claw, Nos.  | ( 2 3<br>I 2 3<br>I 2 3<br>I 2 3   | # dos \$8.00<br># dos 0.00<br># dos 6.00<br># dos 87.5<br># dos 82       | dis  | 32% %<br>89.00<br>10.00<br>9.00<br>18 90 %<br>88.50<br>9.25   |
| Shingling, Nos.<br>Claw, Nos.<br>Lathing, Nos.<br>Broad, Nos.  | 123#<br>123#<br>123#<br>1234#  | 102 \$7.50 \$8.<br>202 0<br>102 8<br>102 10.00 18                        | 00 \$8.50<br>00 0.50<br>00 8.50  | 18 2C<br>89.00<br>10.00<br>9.00<br>14.00 \$   |
| Collins  | 1 2 3  |  | 7.00   | 7.00  |
| Hinges.<br>Gato, Western   |  | 9 dos 80   | .25, dis 6   | & ros   |
| " N. E. Revei<br>Gate, Clark's No.<br>" N. Y. State<br>" Automatic<br>" Common S<br>" Sevmour's<br>" Shepard's.  |  | do   | # \$6.90. d<br># \$0.00. d<br># \$0.50. d<br># \$12.90 d<br>dis s<br>100 & 20. d | 18 60 % 18 50 % 18 65 % 18 60 % 18 10 % 18 10 % 18 10 %   |
| Rolled Plate<br>Rolled Raised<br>Plate Hinges ("Providence")<br>Screw Hook am<br>Strap<br>Heavy Welded E   | { 14 to 36 in.<br>look { 8 to 12<br>14 in.<br>Eye  | . \$4.25 # 100<br>in., \$5.45 #<br>t up, 4.25 #<br>76 & 1111.,<br>84 in. | 100 b d  | is to %   |
| Wrought Strap a  Hors.—Rivete  Socket  Grub  | na T, list De<br>d Shank   | c. 20, '77<br>per dos,<br>\ dos  | 85.00; di<br>85.25, di   | 18 35 %<br>18 35 %<br>18 14 %   |
| Planters'.<br>Scovill Pattern. 1<br>Scovili Pattern, 1<br>Hick's Pat. Solid<br>Winsted & Lane,   | landled<br>C. S. Plante  | ra' d  | dia z<br>dia z<br>dis zotro<br>dis zotro<br>dis zotro<br>dis zotro               | is 96 \$ 18:10 \$ 18:24 \$ 18:25 \$ 18:25 \$ 18:25 \$   |
| Hooks. Bird Cage, Sarger Cotton Cott on, Patente Cotton (Humason Beit, (new list D   | d (N. Y. Mail  | et & Hand  | d  | dis 30 %  |
| Beit. (new list D Benche—Hotchkis "Weston's "Medil's, "Skinner's Clothes Line Sar Rec Jeiling Sarges Harness. Sarges Red Picture Hooks, E Picture Hooks, E Passed (T. & S. Mf  | s' \$5,00 % de<br>, NO. 1, \$10.00<br>\$3.00 % doz.<br>1. \$6.25 per de<br>gent's list.<br>1. ding list.<br>1. t's list. | )E. No. 2, \$9.00  | dis 5.   | 18 10 %<br>18 * 3 |
| Coat and Hat, Sai<br>Res<br>Picture Hooks,<br>gross  | gent's list liding lrown's Pat. g. Co and Hooks a  | Solid Bra  | dia 33/4<br>88, 84 p   | ETOS<br>ETOS<br>EF<br>8 25 S<br>18 40 S<br>ORIOS  |
| Wire Screw Hool<br>Grass and Bush<br>Whiffletree—Pate<br>Hooks and Eyes-   | -Malleable I<br>Brass  | ron  | dis 6  | 18 40 %   |
| " Finished<br>Polished   | 4t are of  | le s6e s5e   | 840 290  | dia<br>20 %   |
| H. P. Pointed and<br>Finished  | } 26<br>ed 25  | 23 21 20<br>23 21 -0   | 19 18  | dia<br>20 %<br>dia  |
| Horse Shoes. I Horse Shoe ( Negum and he due Shoes   | solu de  |  |  | 4-37%<br>5-37%  |
| National Nat | CARROLLER  | # do: # do: # dos #1.85; dos 1.85;                                       | 218 40   | 5 5 6 5 To 1  |
| Wood Head Pick ron or Mailets Pick ce Mailets Pick ce Axes Small, (litchen ice Tong-ombination ice Rettles. Brass, 7 to 13 brass larger than released.   | inches inches  | siva   | . # B 35   | c net   |
| Mnives.  Mnives.  mes' Butcher E:  Shoe  Bread  foran's Shoe and lay and Straw—  | nives  |  |  | 9 20 9  |
| tankents been ulder  | and the second second  |  | DESIGNAL & TAX   | Kings   |

| Butts.  Wrought Brassdls 45 5   | Cutlery.  Meriden Cutlery Co. (Table)net  | Rammors. dis 15 % dis 25 % dis 26 % dis   | Ladles.  Ladles. dis 50&10 \$  Reading dis 20&10 \$  Moreove Patent & dors \$10 \$  Moreove Patent & dors \$ |
|---|---|--|---|
| Corbin's dis 450 to 18 450 to 18 450 to 18  | Heriden Cutlery Co. (Table)   | H. Hammonds (new list July 30, '80)  | "Reading dis 20210 % "Monroe's Patent # dos \$1.0, dis 40 % P. S. & W. dis 30210 %  |
| L 1,90 Joint dis 45 % 10 % L 1,90 Joint dis 55 % 10 % L 1,90 Japanued dis 55 % 10 %   | Aaron Burkinshaw's Pocket   | Whate die 20 g   | Tabular   |
| Table   Tabl  | Embossed Gilt   | Wilkinson's Smiths'  | Yankeedis 10%10 %   |
| Lose rin no Acorn dis sokto f  Acorns dis 50kto f  Japanned dis 50kto f  Plated Tips. dis 50kto f   | Torrey's Rod  | Tower's dis >< 5   | De Beque  |
| Plated Tipsdis 55210 X  WROUGHT IROS.  Fast Joint Narrow  | Warners   | Handles.—Door or Thumb Latches—  Nos 0 1 2 3 4  Per don\$0.80 1.00 1.18 1 35 1.40dis 60210 4   | Lemon Squeezers.  Porcelain Lined   |
| Lt. Narrowdis 50 X 10 %   | No. 2, Medium, Golds 5 No. 2, Small.  | Roggin's Latchesper doz :5c@4oc net<br>Bronzed Irop Drop Latches# doz 8.,75 @ 0.85 dis 10 %  | Lemon Squeezers.  |
| Loose Joint, Broad dia spano dia spano frante Butts, Back Flaps, &c. dis soano finside Riind, Regular. dia spano finside Tight. dia spano finside fins  | Galvanized# dos 3.50 4.00 4.50 is 10 9  | Barn Door. per dos gr. o. dis to % Barn Door. per dos gr. o. dis to % Wrought Chest. dis 60&10 & Surface Chest. Sargent's list. dis 60&10 &  |   |
| Loose Pin, Wr   | No. 4 ("Snoo Fly") Screen door size # doz \$1.80  <br>No. 4 Screen Door Size doz \$2.00   die   |  | Cotton Chalk. No. c, 1, 2, 3, \$6.00, \$6.00, \$7.00.  \$1.00. dis 25 \$7.00.  Misson's Linen dis 25 \$7.00.  Wire Clotes. Galvanised each 20 \$6.40.   |
| American Spiral Spring Butt Co., Jap ddis 24 3  | No. 7, Large  | Litting dia scarre<br>Saw and Plane dis socios<br>Boynton's Pat. Loop Saw Handles. dis 2 x<br>Centennial Saw Handles. dis 2 x<br>Hammer and Hatchet. dis 2 x x us 2 x x  | Locks and Latches,<br>Changes made in list price of a gaylord   |
| Gem Spiral Spring Butts, Japanned. ols 2 & Gem Spiral Spring Butts, Japanned. ols 2 & Geer's Spring and Blank Butts dis 2 & Sabin Mig. Co.'s Double Acting. dis 3 & Sabin Mig. Co.'s Double Acting.   | Sabin's Boss  | Brad Awl # gross \$2.00. dis soltto \$   | A. E. Deitz   |
| Geer's Spring and Blank Butter.   dis 2x   Sabin Mig. Co.'s Double Acting.   dis 2x   Subject   Co.   dis 2x   d  | Cowell'sNo. 1, \$18.00; No. 2, \$15.00 \( \) dos, dis 50 \( \) Rubber. complete\( \) dov \$1.80 dis 10 \( \) Berculesdis 40 \( \)   | Socket " Framing " assorted, " 3.00 dis  | dound Key, No, 'fo c  |
| Bling Butts, Parker dis 70 S  | Crossman & No. 1  | Hickory Firmer Chisel, assorted, \$\frac{1}{2}\$ gross \$\frac{3}{2}\$. \$\frac{1}{2}\$ \text{or} \text{large,} la   | "Hridgeport) dis 25,32 % A. E. Deitz  |
| Seymour. Double Locking " Shepaid a Double Locking " Nos. 12  | Merrill   | Patent Auger, 19es   | F. Many's 'Extension Cylinder"810.50 W dox. net   |
| Shepard s "Noiseless," Nos. to & 6  | Witherby Tool Co  | # angers.  Barn Door, old parterns   | Brantord  |
| Nicholson   | Blacksmiths Reif Feeding each \$2.50, dis 22 \$   | Climax (Anti-Friction)   | Mallory. Wheeler & Co dis 45%2 %  |
| Ham Dina  | Breast P. S & W   | Cheritree  | Padlocks — tissell & Ervin  |
| Botchkiss* low list net Humason, Beckley & Co.'s dis 60 % 10 % 65 % Bargent & Co 's 810, 70 and \$21.50. dis 60 % 10 % Butchers' Cleavers.  | Bartholomew'seach, \$2.50 dis 45&10 \$  | Henshaw'sList of 134 changed to 14 co, dis 55 @ 50 % Judd's dis 55 @ 50 %  | Will, Wilder Co.'s "Standard"dis 40 % Romer'sdis 10 % Conestoradis 50 %   |
| Humason & Beckley Mfg. &c   | Tastenet, merris a dis 25 dis   | Judd's " " 14.00. dis 5 @ 60 % Pit'h's (Bristol) " 14.00. dis 5 5 @ 60 % Rotchkiss"  | A. E. Dietz   |
| \$15.50 10.00 21.40 25.00 27.00 30.00 33.50 35.10   | Moore's Triple Actiondis 20 @ 25 % Whitney's Hand Drili   | Andrews'   | Mailets.—iterative  |
| Can Openers         Nessenger's Comet         # dos \$1.00. dis 25           American         # gross \$7.50. dis 10 %           Duplex         # dos 240. dis 14620 %  | a diametria a la contra di  | Covered Spring dis tokto 5   | D:xon's (P. S. & W.) Nos. 1 3 4 dos\$14.00 17.00 19.00 30.00—dis 34 % Miles' ChallengeNos. 1 2 3  |
| Duplex  | Danbury   | Issiah Blood  8bingling, Nos. 12 3.  | Miles' ChallengeNos. 1 2 3 4 8 7 1 1 1 2 3 4 4 8 7 1 1 2 7 1 1 1 2 3 4 4 8 7 1 1 2 7 1 1 1 2 3 4 4 8 7 1 1 2 7 1 1 1 2 1 3 4 4 8 7 1 1 2 7 1 1 1 2 1 3 4 4 8 7 1 1 2 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  |
| No. 4, 1701 Handle  | Acme  | Hunt's. dis res; \$ Shingling, Nos. 1 2 3  | Hales'Nos. 11 12 19 dis 35 5 1 12 19 4 doz\$27.00 33.00 40.00dis 40&10.\$2 \$   |
| ppragae   | Elevator Buckets.   | Lathing, Nos. 1 2 3.   | Draw Cut  |
| U.M. C. Cen. fire ground  | W 100 \$15,00 @ \$54.00, net Will E. Buckets, heavy, 5 to 10 inches (Duc's Improved)  E. dors 5 for \$10 on net   | Lathing. Nos. 1 2 3  | Each\$40.00 75.00 80.00 225.00 \$60.00 -dis 25 \$\ \text{NOS} \cdots \cdot \cdots \cdot \cdot \cdots \cdot \c  |
| 3. D. & S. B  | \$\psi \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \  | Shinging, Nos. 1 2 5   | Silver & Deming   |
| Caps   Ferculation   1000     J. M. C., F. C. trimmed   500     J. M. C. F. L. ground   700   100     J. M. C. Cen fire ground   700   100     Double W. proof,   \$1.40   100     D. & S. B.   500     Double Waterproof, in 1-10'S   \$1.40     Double Waterproof, in 1-10'S   \$1.40     J. C.   | Genuine Chester—Regular Nos   | Claw, Nos. 123\P'cos 9.00 0.50 10.00<br>Lathing, Nos. 123\P'dos 6.00 8.50 9.00<br>Broad, Nos. 1234\P'dos 9.00 10.00 12.00 14.0c f  | Beef Shavers (Enterprise Mfg. Co)   |
| Cartridges.—Rim   | " Flour   | Shingling Nos. 1 2 2 # dog fto on \$6.50 \$7.00  | 3 blades, \$18  |
| Cards.—Horse and Curry  | Wellington Mills, Grain   | Claw Nos. 1 2 3  | Moinsses Gates.   |
| Carpet Miretchers.  Jast Steel, Polished  |   | "Lightning" # dos \$20.00 net<br>Wadsworth 9   | Second   Fattern  |
| 4 m et e me   | Enameled and Tinned Ware-   | Gate, Western  | Lincoln's Pattern. dla 50210 4 Weed's dis 1: \$ Boss. No. 1 2 3 4   |
| Ded   | Sauce Pansdis 30 % Tinned Sauce Pansdis 30 % Escutcheon Pins.   | * N. E. Reversible * dos \$6.50. dis 60 \$<br>Gate, Clark's No. 1 dos \$0.00. dis 50 \$<br>* N. V. State \$ dos \$0.50. dis 65 \$  | Boss, No. 17.00 \$3.00 \$9.00 \$10.00 per dog.  "Japanned Finish  |
| tumason. Beckiej & Co.'sdis 64&10 %<br>largent'sdis 65&10 %   | Iron  | "N. Y. Skate. \$ dos \$0.90. dis 65 \$ Automatic. \$ dos \$2.90 dis 65 \$ Common Sense. \$ dis 10 \$ Common Sense. \$ dos \$10 \$ Common Sense. \$ dos | Nuts and Washers.   |
| (Thaus.) Trace, 64-1-24   | Door Lock   |  | Washers   |
| Perman Haiter Chain, New list Oct. 22, 79. dis to 2  Coil. New list Oct. 22, 79. dis to 5  Covert Haiter. Hitching and Breast dis 35,5  Deeda Haiter Chain. dis 334,6   | Faucets. Has 40 5   | Rolled Raised  | Nut Crackers Table (Humason & Beckley Mfg. Co.)dis 3314 s Rlake's Pattern & dos \$3.00. die 10 5 Turner & Seymour Mfg. Co dis 10 5  |
| One da Halter Chain dis 33½ 6 Salvanired Pump Chain \$\Pi\$ 5 100 net lack Chain, Iron dis 45 6  Hrass dis eek 10 5   | Frary's Patent Petroleumdis 20&10 %   |  | Oakum. Bost   |
| Chaik.  | West's Patent Key. dis 45 % Metalife Key, Leather Lined dis 65 % Metalife Key, Leather Lined dis 50 % Cork Lined dis 70 % Enterprise (Self Measuring) W doz. \$36.00, dis 25 %  | Screw Hook and Eye   | ### Office  |
| Red   | Fellos Plates   | Wrought Strap and T, list Dec. 20, '77dis 60&:0 \$  **Rivers.*—Riveted Shankper dos, \$5.00; dis 35 \$  Socket   | Olmstead's, Tin and Zinc. dis 40 \$  Olmstead's, Tin and Zinc. dis 50 \$  Brass dis 40 \$  Olmstead's, Tin and Zinc. dis 50 \$  |
| Chiseis.  locket framing, Crossman  | Auburn  | Grub   | J. S. Navy   B 160   Navy   B 160   Ollers   Zinc and Tin   B 160   Ollers   Zinc and Tin   B 160   Ollers   Zinc and Zinc   Gis of a 160   Ollers   Zinc and Sinc a  |
| Witnerby Tool Co dis 642.0 %  | Arcade \$5.00 to £ dis Black Diamond, new list. dis E. M. Boynton'sew list, dis Nicholson List) dis Madden & Cockayne File Co. dis Heller & Bros new list). dis dis   | Planters'dis sc # Scovill Patterndis sc # Scovill Pattern, Handleddis sc # Scovill Pattern, Handleddis sc # Gis   | Pencils. Faber's Carpenters'  |
| Firmers, Crossman. dis 6-8; \$  Arlington Edge Tool Co. dis 65&10 \$  Buck Bros. new list dis 22465   | J. & Riley Carr   | Winsted & Lane, Plantersdis 25 \$ Scovill Patterndis 20@25 \$ Hooks.   | Dixon's Lead  |
| * Merrill   | ### State   St  | Bird Cage, Sargent's list  | Picture Nails.  |
| "Corner : dis 0-4210  Canged Firmers extra : dis 3356 @ \$\varphi\$ co \$ | Moss & Gamble   | Cotton (Humason & Becklev Mfg. Co.)dis 40 %  | Brass Head, Sargent's List. dis cof:10 \$ T. & S. Mfg. Co. dis 40 \$ Porcelain Head, Sargent's List. dis coxito \$ "Judd's List. dis coxito \$ Porcelain Head. T. & S. Mfg. Co. dis 20 \$ Porcelain Head. T. & S. Mfg. Co. dis 20 \$ Ries' Patent. dis 25 \$ Finking Frens Wd02 70C. act  |
| Clamps.   | Fluting Machines.   | Bench—Hotchkiss' \$5.00 ¥ dos  |   |
| " Adjustable, Gray's dis 20 \$  " Lambert's dis 20 \$  " Snow's dis 20 \$  " Hammer's dis 20 \$  " Hammer's dis 20 \$   | Peerless, 4-inch Rolls  | College   Sargent's list   | Magic # dos \$10.00, net Astor Plaiting Machine   |
| Hammer's dis 145 % Stearns's dis 148 to 5 % Cabinet, Sargent's dis 642 to 5 % Carriage Makers', Sargent's dis 642 to 5 % Cord and Tape (I. & S. Mig. Co.), dis 9 %  | # 5 # "   | Harness. (Reading list. dis 20210 s<br>Coat and Hat, Sargent's list. d' 5002 10210 s<br>"Reading. dis 33\\( \) 250 5 S<br>Picture Hooks, Brown's Pat. Solid Brass, & per   | Planes and Plane Irons.  Benca, Wirst Quality   |
| Clips, Axie.  Norway or Best  | Crown. 6, 1, 2-inch Roll  | gross dis 25 g Tassel (T. & S. Mfg. Co.) dis 40 g Wrought Staples and Hooks and Staples, dis 70% c.5   | Planes and Plane Irons.           Bench, Virst Quality.         dis 2527/4 v           "Second"         dis 3027/6 v           Moulding.         dis 35 v           Balley's (Stanley R. & L. Co.) new list Jan. 75. dis 2047 v         dis 2047 v           The Stanley S. R. & L. Co.)         dis 2047 v           Balley's Victor         dis 2047 v           Geffin M. double         dis 20410 v   |
| tuperiordis 45&10 \$  Cowl Hodsdis 3934 \$  | Star 4/5 in. \$4.00 ° 0 in. \$4.00 each dis 10 (rown lewei in. , \$3.40 each dis 10 \$4 american, \$1 in. \$3; 6 in. \$3.40; 7 in., \$4.50 each dis 10 \$5 american, \$1 in. \$3.60 each dis 10 \$5 american, \$1 in. \$3.40; 7 in. \$4.50 each dis 10 \$5 american, \$1 in. \$3.40; 7 in. \$4.50 each dis 10 \$5 american, \$1 in. \$3.40; 7 in. \$4.50 each dis 10 \$4 american, \$1 in. \$3.40; 7 in. \$4.50 each dis 10 \$4 american, \$1 in. \$3.40; 7 in. \$4.50 each dis 10 \$4 american, \$1 in. \$3.40; 7 in. \$4.50 each dis 10 \$4 american, \$1 in. \$3.40; 7 in. \$4.50 each dis 10 \$4 american, \$1 in. \$3.40; 7 in. \$4.50 each dis 10 \$4 american, \$1 in. \$3.40; 7 in. \$4.50 each dis 10 \$4 american, \$1 in. \$3.40; 7 in. \$4.50 each dis 10 \$4 american, \$1 in. \$3.40; 7 in. \$4.50 each dis 10 \$4 american, \$1 in. \$3.40; 7 in. \$4.50 each dis 10 \$4 american, \$1 in. \$3.40; 7 in. \$4.50 each dis 10 \$4 american, \$1 in. \$3.40; 7 in. \$4.50 each dis 10 \$4 american, \$1 in. \$ | Wire Staples, Stanley's list   | 30 70   |
| Cockeyesdis 35&10 %<br>Cockes, Brass.   | Geneva Hand Fluter, No. 1   | " Drass  | Plane Irons, Buckers. St. on to 2  " Auburn Tool Co. St. Old S  |
| tacking new list, July 10, '80 libos "dis 40 %  | Shepard Hafta Flutter   | Horse Kalls.  Nos. 5   | " Ohio Tool Co  |
| Coffee Milia.<br>loard and Boxnew list, Jan., 1880, dis 35.25 \$  | Combined Flutes and Sad Iron  | A C  | Button's Patent   |
| ncrease Wilson's  |   | H. P. Pointed and ( 26 23 21 20 10 18 20 1 National. Pointed 15 23 41 0 19 182 dis   | Cureka Pliers and Nippers   |
| rench Steel   | " Reed & Barton. dis 33/52. 5 Fruit and Jolly Presses. Enterprise Mfg. Co. dis 21. 5  | 2. 5 1   | Russell's Parallel die 24 P S. & W. Cast Steel die 35 C Tinners' Cutting Nippers die 14 S Piumbe and Levois.  |
| Compasses, Dividers, &c.  | Americandis so s !  | heammand heavy   | Plumbe and Levels. dis is \$ Plumbe and Levels. dis 6 \$ Disston's. dis 6 \$ Stanier R. & L. Co.'s Pas. Adjustable. dis 6 \$ Non-Adjustable. the % \$ Chavin's Patent Adjustable. up 6 \$105  |
| alibers   | No 0 1 2 3 4 5 0 7 8 9 9 00 00 00 00 00 00 00 00 00 00 00 00  | L'American les Chisel  | "Non-Adjustable discourse of the Co."s New Adjustable discours of the Co."s New Adjustable discours of the Co. Some adjustable discours of the Co. Some of the  |
| emis & Cail Co.* Dividers   | Glarking, Stanley's. dis tokto \$ Chapin's dis 50810 \$   | Bute Snows.   Ce Awim. (*blacis. &   | Davis Inclinometers.  |
| ook's   | Wire Chapin's dis societo 5 Wire dis societo 5 Wire dis rekto 6 Disston's dis rekto 6 Ginnieta  | Ice Mailets Pick in Head   | Post Hole and Tree Augers.  Samson Post Hole Digger   |
| Corporate Tools.   dis 16 @ 20 %   Corporate   dis 20 %   Corporate   dis 23 %   dis 23 %   dis 23 %   dis 25 %   dis 2  | Nail and Spike dis 45 "Bee " Gimlets  | Combinatior Ice Tools   dos \$200 net  | Vauchan's Post Hole— 6 in Ercho; 7,8 and 9 in Est per doadis togo 6 Eureka Diggers \$ doz. \$2000dis 25km \$ Franing Hocks and Shears. Diston's Combined Pruning Hook and Saw   |
| lough's Wire  | Double Cut Sheparuson'suis 40 %   | Kettles. # 20 net Brass, 7 to 13 inches inclusive. # 20 net Brass larger than 13 inches # 20 50 net Enameted   | Diston's Combined Pruning Hook and Saw  |
| Crew Bars. ast Steel. # 2 846 on. Steel Points. # 2 646   | " Douglass' dia sof   | Minives.  Ames' Butcher Enives   | Mallove.  |
| Curing Irons, &c.,  |   | Shoe district Great Wilson of Great  | Hot House and Tackie  |
| uring 10ngs   | Sarrent's ratent. dis 702 to 5<br>Reading Hardware Co., new list. dis 252 to 5<br>"Keystone". dis 252 to 5  | Kness-Carriage (Jap'd Soc. # gross)  | Jap'd Screw dis 6-870-810 S  Brass Screw d odeto S  Jap'd Side d odeto S  I Clothes Line d odeto S  Ear Fork Solid Eye, 84.5; Swivel, 85.00, dis 1621-1710 S  " "Anti-Friction" S-6.00 dis 2021-05 S  " " F' Cotamon and Pat. Bushed dis 2021 S  " " Tarbox Pat. Iron dis 2021 S  |
| Itabia new list discount  | Gun Wads.<br>U.M. C. S. E. 11 up  | Por Jap'd Same discounts as Door Locks.  | Snade Rackdis to 5  |
| ouchkise hovesty new list, July, 1880, dis set servence.  Exoir Supr. Champion dis 15 5 awrence, with detachable Mane Comp. new list July 1880, dis 15 5 awrence, with detachable Mane Comp. new list July 1880, dis 15 5 awrence, with detachable Mane Comp. new list July 1880, dis 15 5 awrence, with detachable Mane Comp. new list July 1880, dis 15 5 awrence with detachable Mane Comp. new list with the comp.  | # P. E. 11 up 9.10 # # # # # # # # # # # # # # # # # # #  | Plain  | Funches, telt or Division and Check   |
| ubber   | Halters. Covert's Pat. Rope dis 40 % Borse and Cattle Ties. Covert's dis 50 %   | Purniture, Plain   | Bemis & Call Co.'s Spring and Check   |
|   | , , , , , , , , , , , , , , , , , , ,   |  |   |

| Rail. Biding Door Wrought Brass \$ 3 430 dis 20  | Shovels and Tongs.<br>Iron and Brass Head, R. & E. list<br>Polished Steel  |
|--|--|
| Barn Door  | Solare Frames  |
| For Door   For D         | Square Framesby Less than a caseby  Booke Shaves.  |
| J. R. Torrey Rasor Codls 15  | Fron. Wood   |
| Genuine Emersondis 45%*5 Badger's Emersondis 4   | Smoke Welmanne   |
|  | Bonney's # de<br>Stearn's # 1<br>Ives' No. 1, \$15.00; No. 2, \$12.00<br>Douglass'   |
| Chapmandis 15 (3 20) Saunds r'sdis 10 Torrey'sdis 30   | Spoons.  |
|  |  |
| Tron and Tinned.   dis 50&7/4  | Britannia. The Wm. Rosers Mfg. Co  |
| Tinned Iron Helt Hivets and Bursdisg: &7% 1 RIvet Seis40: Reds.  | Hall & Elton. Holmes, Booth & Haydens. German Silver. Cast Steel, Sil. Plated. Tin (P. S. & W.), Feas. In Cowled Hd.   |
| Stair, Brack   | Tin (P. S. & W.), Feas   |
| Stallers. Sarn Door, Sargent's list. dis actio Novelty. dis to Acme (Anti-Friction). dis so  | Tin Cowles Hdw Co.).  Case lots Stocks and Dies. "Lightning" Screw Plate   |
|  | Hindostan Hacker Stone   |
| #2ntia   | Hindostan Hacker Stone.  |
| Lath Yarn 9 13   | Turkey Off Stone (Chase)   |
| " Lath Yarn  | Lake Superior (Chase) Slips Grindstones. Family, Loring's.   |
| Hutes. Boxwood. Ivory (hapth's   | Mtown Pollsh   |
| Stephens   | roid mediti  |
| Cad Irens. From 100 ic ibs   | Ruhy   |
| Gleason's Shield and Töllet us 25<br>Mrs. Pott's Irons, Double Pointed dis 25<br>Mrs. Pott's Irons, Sousse Book dis 36   | Squares.  Steeldis to \$ ; full cases,   |
|  |  |
| Bacder & Adamson's Flint, co to 114\$4.75 F ream   | Winterbottom's Try and Mitre   |
| Sand Paper.  Baeder & Adamson's Flint, co to 14. 34.75 ¥ ream   discovered and sea from the sea of    | Tacts, Brads, &c. List of April 2, 1820 Tinned Swedes Tacks. Tianed American   |
| Harrison, \$3.75 per ream  | Swedes Tacks, all kinds. Copper Tacks and Nalls. Swedes Hungarian Nalls.   |
| Nash Cord.<br>Common   | Tinned Swedes Tacks.  Tianed American  Swedes Tacks, all kinds.  Copper Tacks and Natis.  American  American  Trunk and Clout Natis.  Compon and Patent Brads.   |
| Garc's   | Common and Patent Brads Brush Tacks.   |
| Paw Hide   | Brush Tacks. Leathered Carpet Tacks. American Out Tacks. Cigar Box Nails. Chair Nails. Jounie-Pointed Tacks  |
| **Ash Locks. (lark's, No. 1, \$10.50; No. 2, \$3.00 per grossdis 331/2 Ferguson's  | Chair Nails  |
| ( lark %, No. 1, \$10.00; No. 3, \$2.00 per gross. (tils 33)5<br>Ferguson's. (tils 33)5<br>Wajker's. (tils 33)5<br>Wajker's. (tils 33)5<br>Wajker's. (tils 33)5<br>Northun Window Springs. No. 1, \$10.00; % gross. (tils 15)<br>Northun Window Springs. No. 1, \$10.00; % gross. (tils 15)<br>The Persect, Clark Prink Rob Jay d. gross. (tils 15)<br>Nickel-Plated. (# gross 27)00 persecution.  | Common and Ring  |
| ** Por Knoo Jap d. ** gro 14.00 ne  ** Nickel-Plated ** gro 27.00 ne  **Bash Weights Solid Eyes, in 500 h lots  and over   | Tapes, fleasuring. American. Spring Tapes.   |
|  | Thermometers.  |
| ### ##################################   | Tobacco Cutters.<br>Enterprise Mfz. Co. (Champion)   |
| Silver a   | Enterprise Mfz Co. (Champion)  Wood Bottom # do All Iron # do Nashua Lock Co.'s # doa  |
| ** Mill  | Tinners' Tools and Muchines.   |
| Baynton's Lightning Cross Cuts, new listdis 20<br>One-Man. ali lengths,  | Transom Lifters.   |
| "Lightning Buck Saws X Fardis 24<br>Lightning Hand, Panel and Ripdis 25<br>Wheeler & Ciemson Mrg. Co.'s Handdis 20   | Traps.   |
| Silver".  Silver".  Silver Sil   | " Newhouse Pattern   |
| Per dow. \$10.00 8.00 10.00 7.00 6.30 net  | Round Wire   |
| Red. Folished and Varnished  | Trowels.   |
| #aw Nets. Bynton's Patent X Cut, per doz. \$13.00: Hand Saw. per doz. \$10.00:   | Lothrops Brick and Plastering. Reed's Brick and Plastering. Disston's Brick and Plastering. Peace's Plastering. Clement & Maynard's. Rose's Brick  |
| initation  | Brades' Brick  |
| Nash's   | Worrall's Brick and Plastering  Garden   |
| Cach*s   | Vises.   |
| Airen's Genuine  | Vises.  Solid Box List. of J  "Crown" (A. H. Hildick)  Peter Wrights  Wilkinson's  |
| Diston*  | Parallel, Parker's.  Wilson's.  Howard's.  Howard's.  Merril's.  Bargont's.  Trenton.  Backus and Union.  Oval Side.  D. uble Scruw Leg.  "Fam'ly." List.  "Fam'ly." List.  "Waw Filers, Bonney's.  Searn's.  Loweli Fland Vises.  Richardson's Vise and Anvis.  |
| Telos Platform   | ingent's   |
| Hawe's dis 208: 5<br>Chaslium's Grocers dis 23 8<br>Eureka dis 25  | Oval Slide   |
| Family Universal   | "Fam'ly." List   |
| Ecale Hearns, Chathlon's list  | Hopkins'   |
| Adjustable Box Seraper (S. H. & L. Co.), \$6. co. dis 2021 o S<br>Box, 1 Handle  | Washer Cutters.  |
| Adjustable Box Seraper (S. R. & L. Co.), \$6. co.dis 20&10 S Eox.; Handle # doz \$4.co. dis 10 S Eox.; Handle # doz \$4.co. dis 10 S Cenance Box and Ship dis 20&10 S foot dis 20&10 S Ship (common) per dos \$3.co net (Providence Tool Co dis 20.  | Washer Cutters. Smith's Patent w d Johnson's w dos Penny's w dos 814.00 Appleton's w dos 6   |
| Serew Drivers. Douglass Mfg. Co  | Washers.—See Nuts and Washers. Watt Whoels.—Revised list   |
| "Providence Tool Co. dis to 5 serew Brivers.  Ouglass Mg. Co. dis extrokto 5 Disston's Paient Excelsion. dis 40 8 Disston's Paient Excelsion. dis 40 8 Stanley Rule & Level Ous. Varnished Holls. dis 50 kin 8 Black Handley and 40 40 kin 9 Gay's Double Action Ratches per dox. 4 in. \$5,00; (in. \$50.5; 5in. \$12.00 dis 50 8 Cowles Hdw. Co. No. 2 Extra dis 50 kin | Wire- Brass and Copper. List of June : Braght and Annealed Nos. 10 to 10 Nos. 10 to 11 Nos. 10 to 11 Nos. 10 to 11 Nos. 10 to 12 Nos. 10 to 12 Nos. 10 to 12 Nos. 10 to 18 |
| Black Handles dis 40&10 \$ Gay's Double Action Ratchet   | CopperedNos. 27 ds<br>CopperedNos. 0<br>Galvanized, Nos. 0 to 6Nos. 0  |
| per doz., 4 in., \$9.00; 5 in., \$10.20; 5 in., \$12.00 dis 30 %<br>Cowles Hdw. Co., No. 1 Extra   | Tinned. Nos. o to 18market Cast Steel  |
| Serews.  | Timed. Nos. o to 18. Cast Steel. Timed Broom Wire, Nos. 18 to 25. Annealed Fence, Pos. 8 and 9. Grape, Nos. 10 to 14. Galvanized Telegraph, Nos. 2 to 2  |
| Berews   | No. 12   |
| Japanued, list of Plain Screws   | " Stapies, Galvanizog<br>Strbs Steel Wire<br>Japanned Barb Fence.  |
| Bed dis 10 % Machine, Flat Head, Iron, Am. Screw Co. dis 60 % Round Head, Iron, ' dis 55 % dis 55 %  | Gaivanised  Steel Music Wire, Nos. 12 to 27.  Turner & Seymour Mfg. Co., Picture V Judd's Picture Wire.  Clothes Line Wire, Gaivanised.  |
| ## Wood, Beech ## dox \$3.00, dis to \$ ## Hickory dis 20&10 \$  |  |
| Coach, Common  | Wrenches. American Adjustable  |
| Jack (Wilson's   | "Mechanics"  |
| Scroll Saws.<br>Lester, \$10,0dis 20 \$  | Girard Agi   |
| Shears and Scissors. American (Cast) Iron  | " Merrick's Pattern<br>Briggs Pattern<br>" Cylinder or Gas Pine  |
| Rogers, \$5, 50  | Bemis & Call's Patent Combination.  " Merrick's Pattern.  " Briggs,' Pattern.  Cylinder or Gas Pape  Van Warouer & Williams' Basin  Alken Pecket (Bright)  Webster's Pet. Combination  Webster's Pet. Combination.   |
| Tiners'. dir 1c 5<br>Beymour's, List, Nov. 25, 1879. dis 60 5<br>Heinsch's dis 60 5  | AA LINEGLE.  |
| Mass. Cutlery Co. St. Trimmers   | Universal, XX No. 256  |
| B. & E. list   | NO. 8  |
| Sheaves.  Sheave   | Peerless, No. o, no Cogs.  |
| Sargent's list   | Universal, XX No. 256  No. 1 No. 156  No. 156  No. 156  No. 156  No. 157  N |
| Havyls and Spades. dis 1950. dis 1955  Amee. New list, Jan. 95. 1850. dis 195  Russey Binns & Co., Patens. dis 18  Old Colony. dis 25  Benington's (Lowness's Patens). dis 25  | Unique, No. c  |
| Old Colony dis raid ( learnington's (Lowissan's Patent). dis raid ( learnington's (Lowissan's Patent). dis account of the color of the    | Eureks, No. 5. Noveity, No. 10. with Cog Wheels. Noveity, No. 10. with Folding Bench. Ro. E for Set Tube.  |
| West 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   | At a for let Tube.   |

|  | 7                                       | Г.                                      |
|--|---|---|
| Shevels and Tengs.<br>Iron and Brass Head, R. & E. list  | ic & a                                  | 2                                       |
| Square Frames  | 18 70<br>Lik 10                         | *                                       |
| CDOKE CHAVES.  |   |   |
| Defiance Metallic  | A10                                     | × ×                                     |
| Spoke Trimmers.           Bonney's         \$\P\$ doz \$10.00 dls           Stearn's         \$\P\$ doz \$10.00 dls           t'ven'         No. 1, \$15.00; No. 2, \$\P\$ doz \$40.00 dls           Douglass         \$\p\$ doz \$9,00. dls   | 1085<br>18 40<br>03010                  | MM                                      |
| Spoons.  Basting   | in eq                                   | 8                                       |
| Spoons   S   | 19 55<br>19 60<br>15&5                  | ****                                    |
| Hall & Elton   | 15.85<br>16.85                          | 7 7 7                                   |
| Cast Steel, Sli. Plated  | 39%<br>8. no<br>18. no                  | % et<br>et                              |
| Lighthing " screw Plated   | 18 10                                   | >   1                                   |
| Stone  | is 10                                   | **                                      |
| Slips  | oc no                                   | et et et.                               |
| Turkey Oil Stone (Chase)   | 18 10<br>1035                           | AMM.                                    |
| Grindstones, Family, Loring'sd  Stove Polish.  | 18 10                                   | 24.3                                    |
|  | is to                                   | 2 2 2                                   |
| Ruing Sun  | 5, no<br>c. no                          | et<br>et<br>et                          |
| Steel  | 2 %<br>casi                             | h /                                     |
| Present Squares and T Beveis   | 16 40<br>16 40                          | 5                                       |
| List of April 2, 1850 Tinned Swedes 1 acks dis 4 Tianed American " dis 5   | 18                                      |   |
| Copper Tacks and Nails   | 2 2 2                                   | all a                                   |
| Gimp and Lace Tacks  | 5%                                      | 10 % 01                                 |
| Brush Tacks. dis 2 Leathered Carpet Tacks. dis 2 American Cut Tacks dis 2  | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   | Extra                                   |
| Chair Nails  | 40025                                   | 5                                       |
| Cigar Dox Nails   dis 2 × 5     Chair Nails   dis 2 × 5     Double-Fointed Tacks   dis 40% 5     Tap Berers   dis 10% 1     Common and Ring   dis 15 × 5     Cives' Tap Borers   dis 15 × 10 × 10 × 10 × 10     Enterorise Mfg. Co.   dis 2 × 5     Cigar Dox Nails   dis 15 × 10 × 10 × 10 × 10 × 10 × 10 × 10 ×  |   |   |
| Data   Data   State   Data     |   |   |
| Mahassa America  | 19 70                                   |   |
| Enterprise Mfz Co. (Champion)  | 10 0 c<br>40 0 c<br>40 dt 5             | * |
| Cage      |   |   |
| American Ame |   |   |
| Traps.   |   |   |
| Mouse, Wood. Choker  | 1640                                    | 4 C M                                   |
| " Catch-em-alive   | is 10                                   | Ã<br>A                                  |
| Lothrops Brick and Plastering  | ls ac<br>is 15<br>is 20                 | 5<br>4<br>8                             |
| Clement & Maynard's  | 18 20<br>18 14<br>18 20                 | 8 8                                     |
|  |   |   |
| W Solid Box List. of July 1, '79 di  | n qo                                    | 4                                       |
| " Wilkinson's  | 1356<br>01 8<br>01 8                    | C<br>X                                  |
| Merrill's  | 8 15<br>8 16<br>8 10                    | 5 |
| Oval Sildedis re Duble Screw Legdis re Prentissdis   | 8 40<br>8 40<br>1 10<br>8 25            | 5 5                                     |
| 'Fam'ly. List.   | 25 : ne<br>%10 :<br>%10 :               |   |
| oweli fland Vises  | 8 EC 5<br>8 20 5<br>8 25                | L E                                     |
| Washer Cutters       ♥ doz \$12.00 di         Smith's Patent       ♥ doz \$12.00 dis         obnson*       ♥ doz \$12.00 dis         smr/s       ♥ doz \$14.00 dis         ppletent*       ♥ doz \$15.00 dis   | 1 25 1<br>33/5 1                        |   |
| Washers.—See Nuts and Washers.  Washers.—Revised listdis &   | &1c1                                    |   |
| rman and CopperList of June 10, 1880 dis<br>fright and AnnealedNos. og 18, dis 50, d<br>"Nos. 19 @ 26, dis as d  | 1 20 S                                  |   |
| Nos. 27 us vs. 41s 26/4   alvanized, Nos. 0 to 6   Mos. 0 to 18. 18. 4 to 18.   Alvanized, Nos. 0 to 6   Mos. 0 to 18.   Alvanized, Nos. 0 to 18.   Mos. 18.   Mos. 18.   Mos. 18.   Mos. 18.   Mos. 18.   Mos. 28.   Mos. 29.   Mos.              | 65 %<br>50 %<br>40 %                    |   |
| Inned. Nos. c to 18  | 45 %<br>50 %                            |   |
| Grape. Nos. 10 to 14   | 145 h<br>100<br>100                     | 2                                       |
| staples, Galvaniseq  | blec<br>to £                            |   |
| apanned Baro Fence alvanized Wire. Nos. 12 to 37.  | 100<br>het<br>20 %                      | P                                       |
| inthes Line Wire. Galvanised coi: 242400<br>lire Cloth, green and drab   | net                                     | BI                                      |
| merican Adjustable dis   | 4 5 年 5 年 5 年 5 年 5 年 5 年 5 年 5 年 5 年 5 |   |
| Diagonal. dis dan, lesc, dis obsessed deputine. dis sold be deputine. dis sold be deputine. dis dis sold be deputine. dis sold be deputine displayed be deputine. displayed be deputine displayed be deputine. displayed be deputine displayed be deputine. displayed be deputine displayed be deputine displayed be deputine. displayed be deputine din | 10 %<br>10 %<br>10 %                    |   |
| mis & Call's Patent Combination. dis Merrick's Pattern. dis Briggs' Pattern. dis Cylinder or dis the   | 20 %<br>35 %<br>25 %                    |   |
| in Wagoner & Williams' Basinper dos 8 ken Pocket (Bright)  | 4.4c                                    |   |
| almostat WW Wa -16   |   |   |
| NO. 8  |   |   |
| No. 2 No. 15 No. | See In                                  |   |
| NO. 3  | rade Rep                                | Fac                                     |
| No. 4, sque, No. 4, No. 1.   | Report.                                 | CT                                      |

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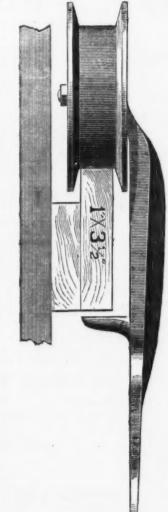
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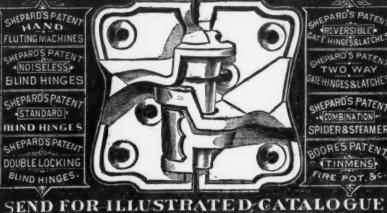
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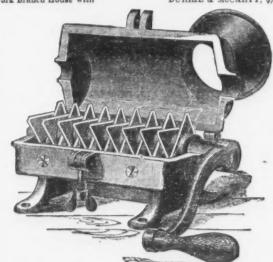
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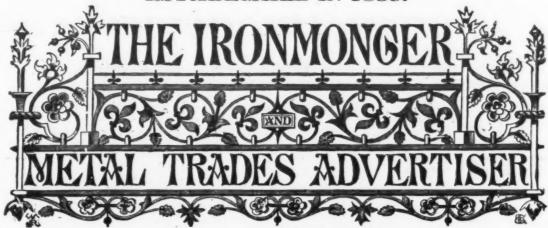
Veneer Nails, Label Tacks and small Nails of all kinds, Cabinet Nails, Barbed Lock Nails, Cigar Box Nails, &c., &c., put up to bulk, 5 lb. packages, papers, or as wanted.

AMERICAN WIRE NAIL CO.

Factory, Fifteenth and Madison Sts.

COVINGTON, KY.

ESTABLISHED IN 1859.



PUBLISHED EVERY SATURDAY.

THE OLDEST AND CHIEF REPRESENTATIVE OF THE IRON, HARDWARE AND METAL TRADES.

OFFICE: 44a CANNON STREET, LONDON, E. C.

ADVERTISEMENTS AND SUBSCRIPTIONS ARE RECEIVED AT THE VARIOUS OFFICES OF "THE IRON AGE." NAMELY: NEW YORK OFFICE: DAVID WILLIAMS, Publisher of The Iron Age, 83 Reade street.

PITTSBURCH OFFICE: 77 Fourth Avenue-JOS. D. WEEKS, CINCINNATI OFFICE: Builders' Exchange-T. T. MOUBE

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This Supplement is published in

FIVE LEADING COMMERCIAL LANGUACES

of the world, including English, and is sent to all the countries where they are spoken, thus placing the contents of the *fronmonger* not only within reach out in the native language of eighty millions of *German*, forty-two millions of *French*, twenty-eight millions of *Italian*, and fifty-one millions of *Spowish* speaking people; or, in all, over two hundred millions of inhabitants in the principal nations where the best purchasers of manufactured goods are to be found.

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THE WHOLE FOREIGN HARDWARE TRADE,

so far as our experience of twenty years is concerned, will be covered by The Foreion Supplement at: east twice a year. Thus a Price List of Advertise ment inserted in the Franciscopy and Foreion Supplement is a strikingly powerful and most efficient way of a indicity not to be compared with any of the other ordinary channels of communication.

John T. Lewis & Bros. No. 231 South Front St., PHILADELPHIA.

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Pure White Lead, Red Lead, Litharge,

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BEST AND CHEAPEST. Established 1845. Office, foot of Houston Street, East River,

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FIRE BRICK **And Furnace Blocks** DRAIN PIPE & LAND TILE. Woodbridge, - - - N. J.

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Edge Pressed Furnace Blocks, CLAY RETORTS, TILES, &c., Twenty-third Street,
PHILADELPHIA Above Race,
Twenty years' practical Exper

PERTH AMBOY TERRA COTTA CO.

A. HALL & SONS, Perth Amboy, N. J. ARCHITECTURAL TERRA COTTA

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BROOKLYN Clay Retort and Fire Brick Works,

(EDWARD D. WHITE & CO.) Manufacturers of Clay Retorts, Fire Brick, Gas House and other Tile. VAN DIKE, EL ZABETH, RICHARDS & PARTITION STS.
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TROY FIRE BRICK WORKS. JAMES OSTRANDER & SON,

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GARDNER BROTHERS STANDARD SAVAGE FIRE BRICK, TILE & FURNACE BLOCKS.

OF ALL SHAPES AND SIZES Clay Gas Retorts and Retort Settings, and Miners and Shippers of Fire Clay. OFFICE: 116 Smithfield St., Pittaburgh, Pa. Works: Mt. Savage Junction, Md., and Lockport, Pa.

HALL & SONS,

# BRICK,

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GEO. H. CREED,

SHIP CHANDLERY 103 Reade Street, New York. Manufacturers of and Wholesale Dealers in

Cotton and "Long Flax" Sail Duck, Cotton and Linen Ravens, Creed's Patent Ships' Clews. Heltman's Wire Rope Splicors. Agent for Raymond's American Crane Oil for lubricating Cylinders and Valves.

Mellert Foundry & Machine Co., (Works Established at Reading, Pa., in 1848.)

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Specials. Flange Pipe Retorts, Valves and Hydrants, Lamp Posts, &c. The Improved Canadhau Tarr-bine Water Wheel, Machinery and Castings for Furnaces, Rolling Mills, Grist and Saw Mills, Min-ng, Pumps, Hoists, &c. Columns, Brackets, Iron ARNOLD MELLERT, Supt., Reading, Pa.

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KEYSTONE SAW, TOOL, STEEL & FILE WORKS,

Front and Laurel Streets.

The cut shown herewith represents our

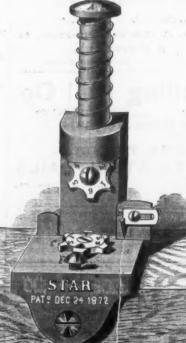
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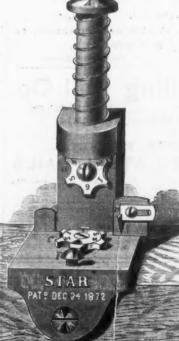
Setting all kinds of Hand Saws, Web Saws, Wood Saws, Back Saws.

We guarantee this tool to do the work for which it is intended, if properly used; if it does not, the money will be refunded and the tool can be returned at our expense.

We have long felt the need of a Saw Set that would set the teeth of a saw without breaking, and at the same time can be worked by anybody.

In the Star Set the same principle is involved as is used in our works for setting saws.





White Lead, Red Lead & Litharge. No. 182 Front Street, NEW YORK,

JOHN JEWETT & SONS,



LINSEED OIL. 182 Front Street, NEW YORK.



TRADE MARK. The Atlantic White Lead and Linseed Oil Co.,

White Lead (Atlantic), Red Lead, Litharge & Linseed Oil. ROBERT COLGATE & CO., 287 Pearl Street, New York.



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Clock Springs and Small Springs BRISTOL, CONN.

The Morris Sash Lock Mfg. Co.,

Manufacturers of The Morris Sash Lock,

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THOMAS MORTON. 65 Elizabeth Street, New York, Manufacturer of Copper and Iron SASH CHAINS, With Patent Attachments.

Warranted for years. Chains of any size made to order, and trade surplied with liberal discount.

are having shows their great popularity and superiority.

There never was a Spring made that is so durable, so complete in its action, operating with a uniform pressure, holding the door tight when closed, and allowing it to open without increasing the pressure at any point. When the door is opened about 130 degrees of a circle, it will press and hold it open. We are making this season three sizes, viz: No. 1 For Screen or Light Storm Doors. No. 2 For Medium Doors. No. 3 For Heavy Doors.

The Spring is easily unhooked and rehooked—in an instant—from the door and also from the jamb, without removing a screw or pin. This is a Convenience Possessed by no other Spring in the Market.

They are for sale by most of the prominent jobbers of the United States and Canada. Correspondence solicited.

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WITH PATENT ADJUSTABLE ATTACHMENT. The only Saw that can be adjusted for either a One-Man or a Two-Man Saw We make the following lengths, 31/2, 4, 41/2, 5 feet. Send for sample.

WHEELER, MADDEN & CLEMSON MFG. CO., Middletown, N. Y



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LEONARD BROS., Scranton, Pa.

POUTS

SEMMLESS

BRASS

COLLAR

BRASS HINGE,

HINGE NOT HINCANNOT MELT OF

MARD BROW NO SOLDERING

Establishments. Manufacturing

This Hose is in use in over 300 Fire Departments; weighs but 58 pounds to the section of 50 feet; will stand a pressure of 400 pounds to the square inch; guaranteed for three years; will retain its strength for many years. We have many testimonials showing continuous service for nine years, where the hose is in good condition for fire service. For sample and price, address

AKRON RUBBER WORKS, Akron, Ohio.

HUNDLEY & HANKS, NORTH CAROLINA HANDLE CO.



MANUFACTURERS OF Handles and Spokes 79 Reade Street and 97 Chambers Street, NEW YORK. HARDWARE COMMISSION MERCHANTS.

| PHILADELPHIA.  | 6                    |
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| (Corrected Weekly by Lloyd, Supplee & Walton.) Terms, 30 days. For 60 or 90 days, interest added at 10   |                      |
| per cent. per annum.   | -                    |
| Anvils.  Peter Wrights, # B  |                      |
| Apple Parers   Section   | 32                   |
| Reading No. 72 5.00  " No. 74 6.00  " No. 75 7.00  |                      |
| " No. 78. 7.50 Rotary Peach Parers. 13.50 Lots of 10 to 25 dozen special prices.   | 67.67                |
| A xes.  Hunt's Kentucky and Yankeeper dos \$11.00 Mann's Red Warrior   | 1                    |
| Beveled Axesadd 500 " net  | 1,                   |
| Double Bit Axes.  Augers and Auger Bits.—New List January I.  Bates' Nut Augers  | 1                    |
| Cook's Augers  | 1                    |
| Griswold Auger Bits  |                      |
| Bonney's Pat. Hol. Augers, list \$48 \( \) dozdis 25&10\( \) Stearns' Pat. Hol. Augers, list \$48 \( \) dozdis 20&10  Balances.  | 1                    |
| Light and Commondis 15&10 %  | 1                    |
| Bevin Bros. Air. Co. Light Hand Bells  | 1,                   |
| Belins Bos. Mfg. Co. Light Hand Bellsdis 60&10 % Swiss Pattern Hand Bellslow list dis 10&10 % Connell's Door Bells   |                      |
| " No. 2, " 16 " " 9.00 dis 15 %  |                      |
| Boring Machines. Upright, without AugersList 5.50 dis 40 % Angular, without Augers   |                      |
| Bolts.—Eastern Carriage Bolts.—dis 75% 10 % Philadelphia Staniey, Wrought Shutter.—new list dis 50% 10 %   |                      |
| Braces.—Barber'r         dis 40 %           Backus         dis 50 %           Spoofford         dis 50 %           American Ball         dis 55 %  | 1                    |
| American Bali. dis 55 %  Butts.—Cast Fast Joint, Narrow. dis 44 % 10 %   | 1                    |
| Cast Loose Joint, Narrowdis 45&10 %  "Broaddis 45&10 %  Broaddis 55&10 %   | 4                    |
| " Acorn, Loose Pin   | 1                    |
| American Ball  | 1                    |
| " Loose John dis 55&10 %  Blipd Butts.  Parker.  | 20 00 00             |
| Parker         dis 70 %           Clark         dis 70 %           Shepard         dis 60 to 80 ft           Luli & Forter         dis 60 kits 5           Huffer's         dis 90 %   | 1                    |
| Huffer's. dis 50 & rot dis 50 & Chains.—German Halter and Coli, new list Oct. 22   | 13                   |
| 1879. dis 50 % Galvantzed Pump. b 10c not Rest Proof Coil Chain—English.   | 1                    |
| \$\begin{array}{cccccccccccccccccccccccccccccccccccc   | 1                    |
| Huner S.   Chains - German Haiter and Coil. new list Oct. 22,   1579.   dis 50 5   Galvanized Pump.   1570.   dis 50 5   Galvanized Pump.   1570.   dis 50 5   Galvanized Pump.   1570.   dis 50 5   | 19                   |
| Plate  | 1 3                  |
| 1880   | 19                   |
| Landers, Frary & Clark. J. Russell & Co., Lamson &<br>Goodnow Mig. Co. and Meriden Cutlery Co., Manu-  | 3                    |
| facturers; prices net.  Drawing Knives.  Hart Mfg. Co. 8   | 1                    |
| Adjustable Handle  |                      |
| No 0 1 2 3 4 5 6 8 Burnished   | 1 1                  |
| 1886   | 1                    |
| Nicholson  |                      |
| Spencer  |                      |
| Eagle—354in. rolleach, \$2.15 \ dis 10 %   | 1                    |
| E. B. Boynton, new   | 1 1                  |
|  | I                    |
| Yerkes & Plumb's, new listdis 30 % Pandles.  Bayrton's Pat. Saw Handles  | I                    |
| Yerkes & Plumb, new listdis 30 %   | Petroli              |
| Hinges.  Strap and T.  Horse Nails.  Nos. 5 6 7 8 9 10  Ausable.  "Pol'ed & P't'd and Blued and Pointed, 31 28 2 25 24 23  | 198767               |
| Ausable Pol'ed & P't'd and 9 27 25 24 23 22  | I I                  |
| GlobeNew list. 28 25 23 22 21 20 Clinton 22 20 19 18 17  | P. HORY              |
| Discount on Ausable and Clinton, 20 %; Globe, 10%  | 15                   |
| Cocks and Knobs.   dir 45&2 \$\frac{2}{3} \text{ Gavlord Cabinet.} \   | T I                  |
| American Padlocks  | 1                    |
| No   | 444                  |
| Lanterns. Nail City  | 4444                 |
| Tubular  | 9                    |
| Philadelphia   | 999                  |
| Lawn and Garden Pumps.   | 9444                 |
| Mattocks. Long and Short Cutternew list Pennsylvania Patternper dos  | XXXX                 |
| Enterprise Mfg. Co.'s Measuring Faucetsdis 25 % Stebbins' Gatesdis 50&10 %   | T                    |
| Pennsylvania Patteraper dos  Molasses Gatesper dos  Molasses Gatesdis 25  Enterprise Mfg. Co.'s Measuring Faucetsdis 25  Stebbins' Gatesdis 26  Lincoln's dis 26  Lincoln's dis 26  Lincoln's Petroleumdis 26  Enast Liquor Cocks, new list Jan. 1 1832dis 26  Cork Lined "18 26  Ment CuttersPenns'vania sient Cutter dis 26  Ment CuttersPenns'vania sient Cutter dis 26  Ment Cutters   | 11                   |
| 1   1   1   1   1   1   1   1   1   1  |                      |
| Stowe  | B<br>L               |
| American   | A                    |
| Planes.  | NP                   |
| American   | N                    |
| Plumbs and Levels. Stanley's Adjustable  | N                    |
| Picks.—New list. Pumps.—Bickford   | ZZZZ                 |
| Rules.—Stanley Boxwood   | N                    |
| Balley   B | 18                   |
| © doz\$8.00 10.25 13.75 14.60 16.75 10.50 Lbs \$0 100 140 200 250 300<br>Squares. Steel and Irondis \$0 %; full case, dis 50&10 %  | ZZZ                  |
| Squarea.  Steel and Iron   | q                    |
| Scythes.—Golden Clipper, Damascus Blade, Boxed<br>and Sharpened  | 49                   |
| Clipper No. 5, Painted Red, Boxed and<br>Sharpened   | 25                   |
| Saws.—Disston's Hand, Panel and Ripdis 20 %<br>Disston's Circular  | 15                   |
| " Patent Tooth dis 40% " Champion Tooth dis 40% Boynton's Lightning Cross Cut. pow lies dis 40%  | 19                   |
| Saws.—Disston's Hand, Panel and Rip. dis 20 \$ Disston's Circular. dis 40 \$ Disston's Circular. dis 40 \$ Cross-Cut No. 2, Flain Tooth. dis 40 \$ "Patent Tooth. dis 40 \$ Boynton's Lightning Cross Cut, new list. dis 20 \$ One Man, all lengths, dis 20 \$ Elightning Buc's Saws, cross bar. dis 25 \$ Lightning Buc's Saws, cross bar. dis 25 \$ Showels and Sprades.   | 16                   |
| " Hand, Panel and Ripdis 25 Shove is and Spades.  Bowlead Spades.  Bowlead Spades.   | 31<br>31<br>21<br>21 |
| Oliver Ames & Sons. new list. dis 40&10 \$ Griffiths. dis 40&10 \$   |                      |
| Bad Irons.—4 to 10 108.       B 18 3540         Mrs. Potts' Patent   | 13                   |
| Washita Extra  | Ji<br>N<br>G         |
| Axe  | D                    |
| Shovels and Spades   dis 40&rc 5   | DCP                  |

|   |   | r:                                   |
|---|---|--------------------------------------|
| Ī | Serews.<br>Flat Head Iron   | nod                                  |
|   | Serews.   dis 40 %  | 3% to                                |
|   | Species   | 7-32<br>3-16                         |
|   | Tined   | 5-32<br>1/4 11<br>Oll<br>No<br>1ess  |
|   | " No. 2, Medium Jap'd " 2.50 10 % " No. 3, Small Jap'd " 2.00 )  Stocks and Dies  |                                      |
|   | Stove Polish.—Gem.       # gross, \$4.50, dis 5 %         Dixon.       5.75       net         Onyx.       # \$4.00 @ 4.25 net   | Ord<br>R<br>5-16<br>1/4 a            |
|   | Tacks.       dis 30&10 %         Show Nalls-4·8, 0\\( \)60; 3\\( \)4-8, 100 ₱ ₺       ro %         Double Pointed Tacks.       dis 40&5 %   | 7-32<br>3-16<br>Se                   |
|   | Traps. Genuine Oneida—Newhouse  | list                                 |
|   | Wronches -Agricultural die folice d   | 2 in<br>Abo                          |
|   | Coos Genuine  | To:                                  |
|   | ## Pright or Ann'd, Ne. o to 18   | Aug                                  |
|   | Tinned Broom Wiredis 47% to 50 % Galvanized No. 7 to 18Market List, dis 35 to 40 % Wringers.  | Aug<br>Axi<br>Fro                    |
|   | Galvanized         No. 7 to 18.         Market List, dis 3t to 4o %           Wringers         Peerless No. 2½6   | Ska                                  |
|   |   | Pik<br>Coa<br>Rol<br>Spi             |
|   | PITTSBURGH. Merchant Iron.  | Tra<br>For<br>Pis                    |
|   | TERMS.—Note or acceptance at 60 days, with current<br>rate of exchange on New York, or a discount of 2 per<br>cent. for cash, if remitted within 10 days from date of   | Slid                                 |
|   | M. OICE.  | Bot<br>th<br>Bot                     |
|   | 114 to 4 by 36 to 1 inch  | Cir<br>a<br>Sm<br>Loc                |
|   | t to 1%   | Squ                                  |
|   | t to 1746 2.50 94 to 946 2.70 2 to 2954 2.70 3 to 7-16 2.90 224 to 343 3.00 346 3.50 5 16 5 3.50 5  | Mil<br>Taj<br>Ho                     |
|   | % to 14   | Spi                                  |
| 1 | % to 1% inch  | IXS<br>IXS<br>I AI                   |
|   | % to 134 by 5-16 to 34 inch   | For                                  |
|   | 74 Inch, Nos. 13 and 14   | Hor<br>Cor<br>Bev                    |
|   | 96 13 and 14. 4-40<br>96 11 and 12. 4-10<br>Heavy Bands. 314 to 6 by 14 and 5-16 loch. 3.20   | Spr                                  |
|   | 136 to 34 by 34 and 5-15 "2.70" 1 to 136 by 34 and 5-16 "2.80 34 to 36 by 34 and 5-16 "3.00" 34 and 36 by 34 and 5-16 "3.00"  | Tire<br>Toe<br>Pld<br>Axi<br>Slei    |
|   | Light Bands.  1½ to 6 by ½ to 3-16  | Cut<br>Sey<br>Gra                    |
|   | 1 to 136 by Nos. 11 and 12. 3.20 36 and 13-16 by 16 to 3-16. 3.40 36 and 13-16 by Nos. 11 and 12. 3.40 36 and 11-16 by 16 to 3-16. 3.50   | Rol                                  |
|   | 154 to 6 by 16 to 3-16  154 to 6 by Nos. 11 and 12. 3.00  156 to 6 by Nos. 11 and 12. 3.10  1 to 136 by 16 to 3-16. 3.10  1 to 136 by Nos. 11 and 12. 3.10  1 to 136 by Nos. 11 and 12. 3.10  16 and 13-16 by 10.0 16. 3.40  16 and 13-16 by 10.0 16. 3.50  16 and 11-16 by 16 to 3-16. 3.50  16 and 11-16 by 16 to 3-16. 3.50  16 and 11-16 by 16 to 3-16. 3.50  16 and 11-16 by 10.0 1.10  16 and 16 by 16 to 3-16. 3.50  16 and 6-16 by 16 to 3-16. 4.50  26 linch by 16 and 3-16. 4.30  26 linch by Nos. 11 and 12. 4.40  16 linch by Nos. 11 and 12. 4.40  16 linch by Nos. 11 and 12. 4.40  | Rol<br>in p                          |
|   | % Inch by Nos. 11 and 12 43c  Hoop Iron.  14 to 4, Nos. 13, 14 and 15. 32c  | pro<br>Ti                            |
|   | \$\frac{9}{2}\$ and \$\frac{1}{2}\$ by Nos. 11 and 12. \$\frac{1}{2}\$ be luch by \$\frac{1}{2}\$ and \$\frac{1}{2}\$ be \$\frac{1}{2}\$ by \$\frac{1}{2}\$ and \$\frac{1}{2}\$ be \$\frac{1}{2}\$ and \$\frac{1}{2}\$ be \$\frac{1}{2} | Fur<br>Hot<br>Gui                    |
|   | 15 to 2, No. 22. 15-16, 1, and 156, Nos. 13, 14 and 15  | Spir<br>San<br>"                     |
|   | 15-16, 1, and 1½, No. 21  | Rol<br>Spu<br>Pul                    |
|   | 56. Nos. 19 and 20  | Eng                                  |
|   | 13-16, Nos. 16, 17 and 18. 3-9C<br>13-16, Nos. 19 and 20. 4-10<br>13-16, No. 21 4-10  | 6 to                                 |
|   | 13-10, NO. 22 4-30<br>\$4, Nos. 13, 14 and 15 4.00<br>\$4, Nos. 16, 17 and 18 4.00<br>\$4, Nos. 16 and 20 4.10  | 25 to                                |
|   | 56, No. 21 4.30<br>44, No. 22 4.30<br>11-16, Nos. 13, 14 and 15, 4.40<br>11-16, Nos. 15, 17 and 18 4.20   | Stri<br>500<br>B                     |
|   | 11-16, Nos. 19 and 20. 4.10<br>11-16, No. 2t. 4.50<br>11-16, No. 22. 4.50   | Dry<br>Ora<br>Red                    |
|   | 56, Nos. 16, 17 and 18 4.00<br>58, Nos. 19 and 20 4.60<br>58, No. 21 4.70   | Litt<br>Fr<br>Te                     |
|   | 96, No. 23. 4.8c<br>9-16, Nos. 13, 14 and 15. 4.9c<br>9-16, Nos. 16, 17 and 18. 4.6c  | from<br>be a                         |
|   | 9-16, Nos. 19 and 20  | Per                                  |
|   | 9-16, No.8 19 and 20  | 6 x                                  |
|   | The prices under Hoop Iron do not apply to Cotton   | 11 X<br>18 X                         |
|   | lighter than the lightest indicated.  | 26 X<br>26 X<br>26 X<br>30 X         |
|   | 1-10c per lb, extra will be charged for cutting floops to specified lengths.  Barrel Hoops.  14 to 2 in, cut to length.  o to 11 lbs, per set of 6 hoops.  18 lbs, and less than o lbs. per set of 6 hoops.  Less than lbs. per set of 6 hoops.  Less than lbs. per set of 6 hoops.  Set the form of the first large set of 6 hoops.  Set less than lbs. per set of 6 hoops.  | 30 X<br>34 X<br>30 X                 |
|   | All Iron, including Tire  | 11 X<br>18 X<br>15 X<br>26 X<br>26 X |
|   | Wings 35c   | 30 X<br>30 X<br>34 X                 |
|   | No. 15 to 17  | Az<br>glas<br>inch                   |
|   | No. 22 to 24  | Inch                                 |
| - | not less than 2.100 extra. Ranked Sheet.  Wood's Futent Planthed Sheet.  1st quality (b)  | DI                                   |
|   | Nos, 21 to 24   |                                      |
|   |   |                                      |
|   | 136, 134, 2 and 234 inch  | N                                    |
|   | 1½ by 34 " 3.60<br>1½ by 34 " 3.60<br>8 lbs to the yard T Rail. 3.90  |                                      |
|   | 12 " 2.90 28 " 108. to the yard 2.00 16 " 2.90 28 " 2.90 29 " 2.90 29 16 Spitce Joints for 12, 16 and 20-lb. Rail, 40c each; 28   |                                      |
|   | 4% by % by c-16   | Pric                                 |
|   | Sqc   Filt Rails.—Punched and Countersunk.   Sqc   Filt Rails.—Punched and Countersunk.   Sqc   | K                                    |
| 9 | Tuniota Wall Dada   | 1                                    |
|   | Sunias van Rode 6. 50 Norway  Guard Iron 5,438,439, and 5,439,436. 4.00 Drag Bars 2,439,439, dand 5,439,436. 4.20 Dropper Bars 3 35 Cylinder and Landside Iron 3.56   | AND PROPERTY.                        |

|                      | THE IRON AG  | I |
|----------------------|--|---|
| *                    | Nails.   | 1 |
| 2 2                  | Best Quality Refined Cast Steel.   |   |
| 8                    | Square, Flat, Octagon and Round.   |   |
| 6                    | 5-10 and 234 to 3 inches   |   |
| W.W.                 | 7-32 and 458 to 5  |   |
| 14.34                | % inch 31 c Oil Well Steel Forgings. 21 to No grade of Crucible Tool Steel shall be sold for   |   |
| ×                    | No grade of Crucible Tool Steel shall be sold for<br>less than above prices.   |   |
| 1 %                  | Machinery Steel.  Bessemer &   |   |
| 为                    | Crucible, Open Hearth.   |   |
| et                   | Round  |   |
| 78                   | Ordinary Sizes, 9, to 2 inch<br>Round 7,16c 6c<br>5-16 and 2\(\frac{1}{2}\) 6c 3 inches. 8\(\frac{1}{2}\) 6c 7c<br>4 and 3\(\frac{1}{2}\) 6c 7c 9c<br>7-3z inch 10\(\frac{1}{2}\) 6c 9c<br>3-16 11 12\(\frac{1}{2}\) 6c 11c  |   |
| ×                    | Square, Flat and Octagon, &c extra throughout the  |   |
| 3                    | Cut to specified lengths, 14c extra.   |   |
| 发                    | Hammer Cast Steel.   |   |
| 3                    | Above 2 inches   |   |
| 30                   | Dogger and   |   |
|                      | Best. 2d Qual. 3d Qual. Open Hearth. To 21 gauge   | l |
| 8 34 34<br>8 34 34   |  |   |
| 万名云                  | Auger and Auger Bit.         8.4cc           Axie Steel for carriages and wagons.         8.5cc           Frog Points and Plates.         0cc           Side Bars.         0cc           Plck, plain.         8cc  |   |
| 18                   | Frog Points and Plates   |   |
| 00                   | and Mattock, beveled   |   |
| 00,00                | Table Cutlery 88/6c Pike and Cant Hook 9c Coal and Granite Wedge 9c Roller 9c  |   |
| 00                   | Coal and Granite Wedge   | ı |
|                      | Roller 77:cc<br>Spindle, subject to Machinery classification 85:cc<br>Trap Spring Steel 95:cc<br>Forged Crank Pins and Lathe Spindles 05:cc<br>Piston Rods, plain 105:cc   | ı |
|                      | Piston Rods, plain   | l |
| nt                   | Forged Crank Fins and Lathe Spindles 105cc Piston Rods, plain 10 forged to shapes 105cc Silde Bars, plain 105cc Crucible Ones Hearth or Proceedings 105cc Crucible Ones Hearth Ones Hearth or Proceedings 105cc Crucible Ones Hearth | l |
| of                   |  | ı |
| 5C<br>6C             | Boiler, Fire-Box and Flue Sheets, not less than 3-16 thick.  Boiler, Fire-Box and Flue Sheets, not less than 3-16 thick.  Circulars and semi-circulars.  | ١ |
| 50,00                | thick.<br>Circulars and semi-circulars, when ordered separately  | l |
| 70                   | ately. Smoke Stack, to shape. Locomotive Tank Steel.   | l |
| 7C                   | FUE Cast Steel   | l |
| 90                   | Square, Round, Half Round and Flat Bastard, 8-<br>inch and over  | l |
| 30                   | Square, Round, Hair Round and Flat Bastard, 8- inch and over   | l |
| 50                   |  | l |
| 3C<br>7C             | Spiral and Taper, cut to lengths   | l |
| 00                   |  | ı |
| 50                   | 133/16 3/33-16 and 54. 85/20-16 and 5-32. 85/20 1 and 13-163/4 and 5-33. \$(\$\)\( \)\( \)\( \)\( \)\( \)\( \)\( \   | l |
| 50                   |  | l |
| 7C                   | Horse Pake Steel and to  | l |
| 5C                   | Hoe, Crucible  | 1 |
| 8e<br>4e<br>Ie       | Hoe. Crucible  |   |
|                      | Bessemer and Open Hearth.  | l |
| 70<br>70<br>80       | Bessemer and Open Hearth.  Spring  | ı |
| 00                   | Pldw   | ١ |
| 00                   | Sleigh Shoe  | l |
| IC                   | Grain Drill Bars   |   |
| 20<br>40             | Rolling Coulter Blanks, cut and punched  | ı |
| 50<br>70<br>80       | Rolled Hammer Billets  |   |
| 10                   | Rolled Hammer Billets  Where Bessemer or Open-hearth Steel can be used in place of Crucible, the difference in price shall not be greater than ic, per ib., except where especially Terms.—Four months; 3 per cent. discount for cash, if remitted within 30 days.   | ı |
| 3C<br>4C             | provided in the list.  Terms.—Four months: a per continuous where especially   | l |
| 3C                   | if remitted within 30 days.  Relis and Castings.   |   |
| 30<br>40<br>50<br>60 | Furnace, Floor and Straightening Plates  |   |
| 76<br>8e             | Guide Plates Spindles and coupling boxes   |   |
| 50<br>60             | Sand Rolls and Pinions, large size   | l |
| 7C<br>8c             | Rolling Mill Castings under 50 lbs   | ı |
| 96<br>76<br>86       | Pulleys up to 30 inches.   |   |
| 90                   | Over 30 inches   |   |
| 90                   | Relis and Castings.  Relis and Castings.  Furnace, Floor and Straightening Plates  |   |
| 10                   | 8 to 15 in. " 8 to 10 in. long   |   |
| 30                   | 25 to 24 in. " 15 to 72 in. "  |   |
| 10<br>20<br>30       | White and Red Lead. Strictly Pure White Lead in Oil, in kees in lete of  |   |
| 4C                   | Strictly Pure White Lead in Oil, in kegs, in lots of 500 h and over, 90; less than 500 h, 566 h in 15 and 50 h. Tin Palls, 56c h b over keg price; 125 h Tin P. Alls. 10 h over keg price; 125 h Tin B. Cases, 12c.  | 1 |
| 3C                   | B. Cases, 12c. Dry White Lead, less than too be assorted, 1 to 5 B, 100  | 1 |
| 50<br>60             | Orange Mineral, genuine. in kegs, icc; in barrels, 9 c   | - |
| 10<br>50<br>50       | P.dls. to \$\insert\$ b over keep price; assorted, i to 5 in 100 fb Cases, 12c.  Dry White Lead, less tnan soo lbs. 854c; over soo lbs. 854c orange Mineral, genuine, in kegs, 10c; in barrels, 9 c Red Lead, very brilliant, 18c; 17c; 75c Red Lead, very brilliant, 18c; 17c; 75c Terms; Note at sixty days, or if paid within 15 days from date of invoice, a discount of 126 per cent, will be allowed, but not otherwise.   | - |
| se l                 | from date of invoice, a discount of 136 per sent. will   | - |
| e<br>Se              |  |   |
| e                    | Per Box of to Feet.—Discount foct to % on single strength, 65,620 % on doubte.   | 1 |
| 10                   | Single Strength  |   |
| ie<br>je             | Size. AA ( A   B   C   |   |
| ic ic                | 6 = 04   |   |
| ib<br>n              | 11 X 14 to 16 X 24 .   |   |
| e                    | 26 X 28 to 24 X 36   |   |
| 100                  | 30 X 52 to 30 X 50 15.00 14.00 11.25 10.50   |   |

| Window (<br>Per Box of so Feet.—Discount 6:<br>55 de 20 % on d | Arne   | m sing | ele stre | ngth   |
|--|--------|--------|----------|--------|
| . Single Strength.   |        |        |          |        |
| Size.  | AA.    | A.     | В.       | C.     |
| 6 x 8 to 10 x 15   | \$8.25 | \$7.50 | \$7.00   | \$6.50 |
| 11 X 14 to 16 X 24   | 0.25   | 8.50   |          | 7.20   |
| 18 X 22 to 20 X 30   | 10.75  | 9.75   | 8.75     | 7.7    |
| 15 X 36 to 24 X 30   | 12.25  | 10.75  | 0.00     | 8,50   |
| 26 X 28 to 24 X 36   | 13.00  | 11.50  | 9-75     | 0.0    |
| 26 X 36 to 26 X 44   | 14.50  | 13.25  | 10.75    | 9.5    |
| 26 X 46 to 30 X 50   | 15.00  | 14.00  | 11.25    | 10.5   |
| 30 X 52 to 30 X 54   | 16.00  | 14 50  | 12,00    |        |
| 30 X 56 to 34 X 56   | 17.25  | 15.50  | 13.50    |        |
| 34 X 58 to 34 X to   | 18,25  | 17.25  | 15.00    |        |
|  | 20.75  | 18.75  | 17.25    |        |
| 6 x 8 to 10 Strength.  |        |        |          |        |
| 6 x 8 to 10 x 15   | 12.75  | 11.75  | 10.75    | 10.0   |
| 11 X 14 to 16 X 24.  | 14.50  | 13-25  | 12.50    | 11.2   |
| 18 X 22 to 29 X 30.  | 17.25  | 15.75  | 14.00    |        |
| 15 X 36 to 24 X 30   | 19.75  | 17.25  | 14.50    |        |
| 26 X 28 to 24 X 36   | 21.00  | 18.5C  | 15.75    |        |
|  | 23.25  | 23.25  | 17.25    |        |
|  | 24.00  | 22.50  | 18.00    |        |
| 30 X 52 to 30 X 54   | 25.75  | 23.25  | 19.25    |        |
|  | 27.75  | 35.00  |          |        |
| 34 X 58 to 34 X 60   | 29.25  | 27.75  | 24.00    |        |
| 20 m 00 to 40 M 00   | 33.25  | 30.00  | 27.75    |        |

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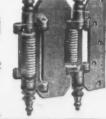
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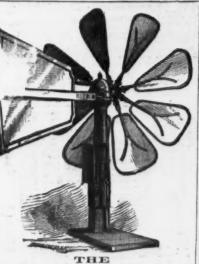
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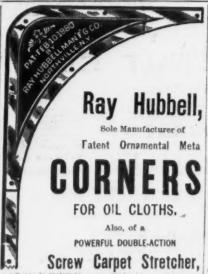
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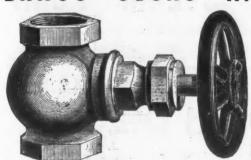
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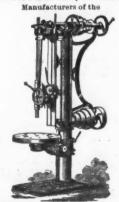
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|   | Augure C Bitts - Suedi's Auger dis action of the Color of |
| - | Red Cross  |
|   | Ax Handles.— Boys'   |
| - | " 34 in., No. A.   |
|   | Dowse  |
|   | Wrought perft, %, 4c; %, cc; %, bc  Bells.—Connei's Crank Gong reduced list. dis 2020 10   |
|   | Bird Cages, Japanned M. B. & D., reduced list, 1879dis 40 Brass  Blind Fasts,—Lock Fasts   |
|   | Voarie Fasta Fasta Fasta See See See See See See See See See Se  |
|   | Brad Awi Handies.— # doz \$2.0 Bolts.—Norway Iron Carriage dis 70%; Common dis 80%; Borax.—Refined. # b 14.  |
|   | Boring Machines. Eagle Upright each. Eagle Angle each. Eagle Angle each. 5.75 lbst dis :08 1.5   |
|   | Speit Augers. # 601 2 4  Braces.—Barber's  |
|   | Bolts.—Norway Iron Carriage dis 705x Conmon dis 80x 18 Borax.—Refined dis 70x 10x 10x 10x 10x 10x 10x 10x 10x 10x 1  |
|   | Lester   |
|   | Brohged Shelf, B. R. & D newlist dis school  |
|   | Broage Hardware. dis 45% to Batte. Union Fast Joint. dis 45% to Loose dis 55% to dis 55% |
|   | Silvered dis 55210 Boston Finish dis 75210 Union Sulral Spring dis 25210   |
|   | Store Sheif.   dis 40 % to   |
|   | No. 134  |
|   | Carriage Jacass  |
|   | No. 1each, \$2.0   |
|   | No. 3  |
|   | No. 5  |
|   | No. 4  |

Casters.—Bed and Table
Chain.—Traces 6½, 10, 4, streight
(Colt 2, 16, 4) Galvanised Wire, no feet each...

Coare Hods... Dover. "Galvanise
Jananoed new list...

Coffee Milds... New list
Cosper Rivets.

Dew Ties.

No 20, 25 ft. "" with snap...

No 40, 35 ft. "" with snap...

No 40, 35 ft. "" with snap...

No 40, 45 ft. " with snap...

No 50, 46 ft. 80, 4 " with snap...

No 50, 46 ft. 80 " with snap...

No 50, 50 ft. 8 ft. " with snap...

No 50, 50 ft. 8 ft. " with snap...

No 50, 50 ft. 8 ft. " with snap...

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Wire Cloth .- Clinton Wire Fence. Scutt's Patent, Painted

Novelty Set Tub, K.

Wire Goods, -Gate Hooks and Eve

| - 2 187   | 87   |
|---|--|
| CocksBrass. L. F. & C   | P ot stb   |
| Cocks.—Brass. I. F. & C. Lordage.—Bianlia, usual trade dis ic Lyuve. Lyuve.—Bars.—Bast Steel. Lyuve.—Bars.—Bast Steel. Lynn Sheel Pointed. Lutlery.—Pocket, American Shear Co.'s. Stutener Knives. "Woods." Lap. Boister. Square Handie. Steak Vnives. Lap Boister, Ovai Handle. Stickins. Skinning. Rutcher, Common Round Handle, "Woods". Bost Knives. "Woods". Dividers.—Cook's. Dog Ceilars. Dog Muzzles.—Automatic. Dog Muzzles.—Automatic. Dog Poor Springs.—Torey's Rod.   | * 15 13160<br>* 15 90<br>* 15 60<br>* 15 60<br>* 16 40 % |
| Square Handie<br>Steak Knives.<br>Lap Bolster, Ovar Handie  | dia 25%<br>dia 25%                                       |
| Skinning<br>Butcher, Common Round Handle, "Woods"<br>Shoe Kuives, "Woods".  | dis 35 %   |
| Dividera.—Cook's  | dis 25 %   |
| Dogr Springs.—Turrey's Rod. Initation Torrey's Rod. Cem Coll. Crown. Warners.   | dos \$2.00<br>dos \$1.7;                                 |
| Crown. Warners Door Stops.—" Thurston's"  | dos 81.25<br>dos 82.00                                   |
|   |  |
| Drills,—Morse Bitt Stock.  Morse Straight Shank.  Kmerv,—Wellington Mills  The Alden Emery Co.  Turk!sh in 10 % cans.   | ₩ B 100<br>₩ B 60<br>₩ B 80                              |
| Bnamelled Ware. Standard Mfg. Co. Ketties. Sauce Pans Felloe Plates.—Wrought.   | Rorror att   |
| Kiles.<br>American File Co  |  |
| Fluting Machines.<br>Knox list, \$1.00.<br>American list, \$3,40.   | a or elb   |
| Gimiet Bitta. Gentine German, No. 125, 1-32 to 8-52, pe   | r dox \$1,ce   |
| Combination Class Cutter and Enife Signer   | harp-  |
| Grub Hoes.—K. P. & Co.'s No. 2, 11.55 p de<br>Hammers.—Maydote's  | dis 15 %   |
| Acme Rullers  | THE SORETO P   |
| Ctimax Cormon Hangers Rollers di Hand Screws  | 11s 90#10 %<br>83 356#10 %                               |
| Hatchets -C. F. Dowse new list. Underhill. Hay KnivesLightning. # do Fisher's Patent. #   | dis 3314 \$  |
| Fisher's Patent   | dos @14.0c   |
| Wrought Screw Hook  | dis 40 f   |
| Horse Nails. No. 6 7 8 9 National Finished  | dis 20 \$  |
| Horse Natis,—Bridgewater No. 5 21: No. 7, 21: No. 8, 20; No Ice Cream Freezers,—"Packer's" Knabs,—"Norwalk." New list   | dis 25 \$<br>1. 9. 19.<br>dis 40 \$                      |
| Bilver Glass  Beil Pulls  Lanterns.—Guarded 20, 99.   | dis source &   |
| Hinges.—Strap and T (new list) Providence Plate. Wrought Screw Hook. Hoes.—W. C. & Co. 's. Hoes.—W. C. & Co. 's. Hoes.—W. C. & Co. 's. Horse Nails. No. 0, 7 8 9 National Finished 23, 21, 20, 10 Putnam Pointed 26, 25, 25, 24 Herse Nails.—Bridgewater No. 5 21; No. 7, 21, No. 8, 20; No fee Cream Freezers.—"Packers" Knebs.—"Norwalk." New list. Bilver Glass. Lanterus.—Guarded No. 99 Tubulars, No. 6 Ealtroad. Oil, No. 43 Hurricane. Lend.—Sheet.  | F dos 8.00<br>F dos 9.00<br>F dos 4.00<br>dis 20 %       |
| Pipe  | . W to bigg  |
| Lecks, Norwalk Genuine Bronze Goods,<br>Eagle Cabinet. Trunk W. Wilcox & Co., Padiocks. American Lock Co.'s Steel Key Manure Porks.—W. C. & Co Biattecks.—K. P. & Co., Long Cutter, to co.  | dia 40 %   |
| Mattecks.—K. P. & Co., Long Cutter, D. oo<br>K. P. & Co., Short Cutter, 15. co y doz.   | dos.o\$  ₩ dosdis 30 %dis 30 %                           |
| Measuring Tapes.—Eddy's.  Meat Untters.—Miles' Challenge.  Hale's, New list).   | dis 30 %   |
| Rattecks.—A. P. & Co., Long Cutter, 1c. & W. dos.  R. P. & Co., Short Cutter, 1c. & W. dos.  Pick 1600 W. dos.  Meast Cutters.—Miles Challenge.  Hale's, (New list).  American.  Money Drawers.—Tucker's Alarm.  Mouse Traps.—Delusion  Novelty.  Nails. W. kee   | dos \$22.00<br>dos \$22.00<br>dos 2.00                   |
| Novelty.  Nails.  Gilers.—Zinc and Tin  Brass and Copper.  Ox Bows.—Extra finished and varnished.  Is in., ** dos.* pair. \$5,25; 2 in., ** dos.* p.  Padiocka.—W. Whora & Co.*z.  Paper,—Tarred Sheathing.  Dry Sheathing.  Pleas.—E. P. & Co., Adze Eye, 5 to 0 h12,00  Planes.—Greenfield Tool Co.  N Y Tool Co.  N Y Tool Co.   | . 3.15 rates<br>dis 50%<br>dis 40 m                      |
| 1½ in., ¥ doz. pair\$5.75   2 in., ¥ doz. pi<br>1¾ in., * & & & & Padlocks.—W. Wilson & Co.'z.  | air@g.qo   |
| Paper,—Tarred Sheathing  Dry Sheathing  Picks.—E. P. & Co., Adze Eye, 5 to 6 b12,00.  | \$ \$ 2760<br>\$ \$ 2760<br>dis 30 \$                    |
|   |  |
| Pinted Ware.—Rosers & Bro   | dis 402 4 %  |
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| Razors Torrey's   | dis 10 %   |
| Sadirens,—Commor.<br>Laundry.<br>Tailor's Geese.  | 4 2 sign   |
| Enterprise. "Potts".  Mash Locks.—King & Hutchinson's, new  Mandpaper.—lineder & Adamson.  M. & D.  | list alb sq 1  |
| Sash Weights.—Patent Eye  | Post alb   |
| W. M. & C., Common Tooth, No. 1  Champion  Diaston's, Common  | Fifoot yes.  |
| Cross-Cut Saws.  W. M. & C., Common Tooth, No. 1  W. M. & C., Common Tooth, No. 1  Diaston's, Common   G. G   | · · · · · · · · · · · · · · · · · · ·                    |
| Richardson Bros   | dis ac s.<br>dis ac s.<br>dis ac                         |
| Richardson Bros.  Saw Bindes Disaton  W. M. & C.  Welch & Griffith, Extra.  No. 2  Scales Falrbanks  Screws Aiken's Flat-Head fron  American Flat-Hoad fron   | ₩ dos as.40<br>₩ dos 7.00                                |
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|   |  |
| Shu ves.—Kimba <sup>112</sup> .<br>Watrous.<br>Shears.—American Shear Co., new list<br>Shot.—Tatham's.<br>Shotels.—O. Ames. new list  | T Inch 750   |
|   | dis 10   |
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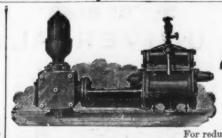
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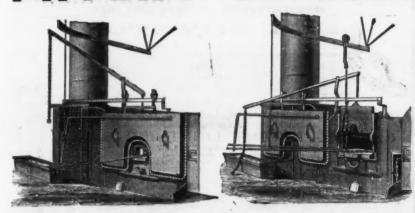
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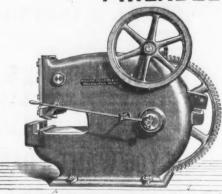
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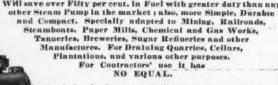
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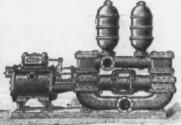
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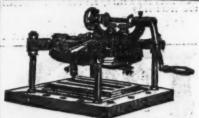
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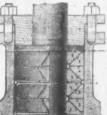
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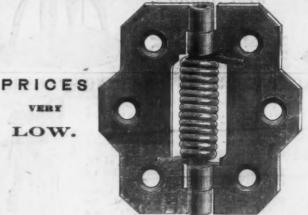
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